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QUARTERLY

The seal of The Chicago Medical School is circular. It features a caduceus (a staff with two snakes entwined and wings at the top) in the center. The words "THE CHICAGO MEDICAL SCHOOL" are inscribed around the perimeter of the seal.

THE CHICAGO MEDICAL SCHOOL

VOLUME 6, NUMBER 2

APRIL, 1945

BUY

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BONDS

QUARTERLY

Published Quarterly Under the Auspices of

THE CHICAGO MEDICAL SCHOOL

VOLUME 6, NUMBER 2

APRIL, 1945

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Editorials . . .

ENDOWMENT

In the last issue of the *Quarterly* we stated a number of reasons for the Student Endowment Drive and explained why there was no acceptable alternative to the success of the program of endowment. With this issue we are pleased to write that over \$300,000.00 is in the Student escrow fund, with more pledged. By December 31, 1945 the students hope to have the full amount of \$450,000.00 available for the fund.

We publish in this issue a letter from President Arnold of the Student Council. Mr. Arnold thanks the students for their efforts and congratulates them on their success. We should further like to exhort them not to become too complacent in this undertaking but to continue to push forward with all the might at their disposal. None of us must relax until our final goal is reached. The goal is not merely the financial success of the Drive. It is something infinitely more important—it is approval of the School. There is no doubt that every student, alumnus, faculty member and member of the administration is anxious for the School to achieve this end. Nor need there be any question as to how we are to go about obtaining it. Every individual is or must be fully acquainted with the different steps we are using in our hitherto unprecedented efforts. If we seem to urge excessively, it is because we well know what approval will mean to us. It will give us a chance to fully participate in the medical profession of this country, where medical practice has reached the most efficient and ethical degree yet devised.

While we students shall continue our efforts, we "throw the torch," as Mr. Arnold says, to the alumni, the faculty, and the Board of Trustees. We earnestly feel that they will do their utmost to help us reach our aim.

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In this common enterprise we share a common purpose and expect a common gain. As we have said before, there is no alternative to success. *The Endowment Drive must not be allowed to fail at any point.* The responsibility for the continued success of the Drive falls equally upon all of us and must be equally maintained. We must each make as much sacrifice as we can to insure our investment in the future, a future which irrevocably ties us with The Chicago Medical School



COMING OF AGE

The present editor was peacefully copying abstracts in the library this past month when Miss Campbell, our excellent librarian, showed him a bound volume containing the last three years of the *Quarterly*. The immediate delight with the magnificent black tome gave way to a less exuberant, but more thoughtful attitude. When a journal reaches the bound volume state, it has acquired a certain amount of past, and the *Quarterly's* history is one of hard work and determination on our part to make this the best medical student publication in the country.

We of the *Quarterly* are proud of our magazine. We are proud that we have formed a strong link between the School and its alumni. We are proud that we have been able to present many original articles of teaching value. We are proud that that the quality of the magazine has reached a point where the circulation department receives numerous requests from all over the country for reprints and extra copies. We are proud of our past editors and staff members, many of whom are now serving their country in this war. We owe a debt to these men who conceived and created the *Quarterly*. The magazine has changed since its beginning four and a half years ago. The cover isn't as shiny and the contents are not so effusive, but the ideals of that first group of medical journalists remain intact. For ourselves and for our School, we intend to continue the present upward development of the *Quarterly*.

Endowment

John J. Sheinin

Dean of The Chicago Medical School

IT IS stated in authoritative quarters that, in order for a medical school to maintain acceptable standards, it must have an adequate endowment or some other general source of income besides that received from students' tuition and fees. Endowment as such is not a whim nor an extravagance; it is a bare necessity, particularly in the case of an institution which is not supported either through public taxation or church affiliation. An endowment is essential for the following reasons:

(1) The bulk of the teaching during the first two years of the medical curriculum is conducted in the school laboratories, while that of the last two years is primarily pursued in hospitals, clinics and dispensaries.

A. To do creditable work in the first two years a School must have an adequate staff, qualitatively and quantitatively, which it must acquire in competition with the existing endowed schools. If the funds of an institution are inadequate, the insufficiency of financial resources reflects at once both in the number and ability of the teachers.

B. The teaching during the second two years is conducted primarily with patients. These patients must be willing to serve as teaching material for the medical student. Private patients are not disposed to make themselves available for teaching purposes, unless by force of economic circumstances they are obliged to receive free medical and surgical care in a hospital, clinic or dispensary. It is only the "free" or "partly free" patients who are of didactic value to a medical school. The maintenance of free beds and other free medical facilities for patients by itself costs nearly as much as an average medical school receives from students' tuition and fees.

(2) A qualified medical school must have definite minimum acceptable standards of admission and promotion.

A. All medical schools have certain definite standards of admission, which are at least equal to the minimum standards suggested by the Council of Medical Education and Hospitals of the American Medical Association and the Association of American Medical Colleges. In many schools the requirements for admission surpass those required by the above-mentioned agencies. If the existence of a school depends solely on income from students' tuition and fees, it must necessarily have a definite minimum number of students enrolled in order to meet its minimum budget. If it should happen that not enough applicants for a given class possess the minimum qualifications for admission, one of two alternatives may result. The school would either have to lower its standards in order to accept the needed number of dents, or the standards of admission will be maintained and the enrollment decreased. In the first case the "standards" would no longer remain standard; in the second case, the income would be lowered and with it the economic and academic level of the institution. The latter would necessitate a reduction in staff and available teaching facilities and by making the position of the staff insecure, demoralization of the institution would result.

B. A similar situation exists in the case of promotion of students. If it should happen that some students who have already enrolled in the medical school have demonstrated their inability to do acceptable work and should, by virtue of existing standards of promotion, have to be dropped, the medical school would once again have to make its decision whether to keep enrolled substandard students in order to maintain its income or drop them and have its economic structure endangered.

(3) Investigative work constitutes an important phase in the function of a modern medical school.

(Continued on page 32)

THOUGHTS ON THE POTENTIALITIES OF THE CHICAGO MEDICAL SCHOOL

Irwin S. Neiman, Ph.D., M.D.

Assistant Professor of Bacteriology and Public Health

THE entire world is being shaken by an upheaval startling to its very roots. From this chaos many of us expect a rebirth of a new and better world, where nations can live together in peace and security. There seems to be a unanimity of opinion that the result of the present conflict will be a betterment of society but the means necessary, the post-war policy to follow, has given rise to a good deal of discussion. There are those who believe in doing nothing, in letting "nature take its course," that this terrible experience will act as a chastisement and that the people of the earth will now be "good boys" and no longer fight among themselves. There are others who are not so complacent about the results to be expected, who believe in the basic principle of cause and effect and who believe that to avoid an undesirable effect one must determine the cause and eliminate or divert it.

Medical men have known for a long time that the "course of nature" even in that small unit of the biological world known as the human being, is not always in the interest of men. They have known for a long time too, that seeking to eliminate cause is a basic principle of human ills. Is it too unreasonable to carry such logic further and say that elimination of the cause of certain ills of nations will react in the same way on society as it has been shown to act on the individual? Such a deduction is elementary. It is fundamental to a proper approach to the rehabilitation of nations, institutions and individuals in the post-war period.

The complacent individual who adheres to a "do nothing" policy, in my opinion, has no place in post-war construction and reconstruction. But even for those who do feel they must do something of a positive nature, there may not be many apparent lines of endeavor. Many will feel their inadequacy in spite of their sympathy with the progressive changes inherent to a lasting peace. For the success of the coming peace, one of the primary necessities is a sympathetic public, i.e., sympathetic to changes which tend to improve the lot of the common man and suppress intolerance for the basic rights of human beings.

No one can argue with the concept that increased educational facilities of all types for all peoples will serve these ends admirably. We do not happen to be concerned here with general education but with a specialized process; namely, medical education. Further, this is not the place to review this phase of the subject. However, it might be pointed out that through the efforts of such organizations as the Council of Medical Education and Hospitals of the American Medical Association and the Association of American Medical Colleges, standards have been set in this country which are second to none. What is even more remarkable, most medical schools that have remained in continued existence, have found it possible to attain and some to surpass these high standards.

It is or should be the aim of every medical school to attain, adhere and surpass these standards, because only by having such goals can we continually progress. Any institution which does not maintain proper standards and strive to reach higher planes, is in danger of becoming complacent and in time retrogressive. This not only applies to the individual schools but to the whole field of medical education. This leads us to the inescapable conclusion that schools which are not up to standard detract from the progress that has been made thus far. Therefore, it is necessary that they be either brought up to standard or eliminated.

At the Chicago Medical School we find ourselves, apparently, in this position and we have what seems to be a simple choice; come up to standard or close. The choice is there to be made, but it is not so simple as it appears. That it would be easier to close than to come up to standard is conceded without question. It may be pointed out, however, that such a procedure would be compatible with following the lines of least resistance which is the accredited policy of those who were described in a previous paragraph as "do nothings." But the challenge implied is not what makes the choice difficult, it is the general unawareness of the possibilities for the Chicago Medical School of the future.

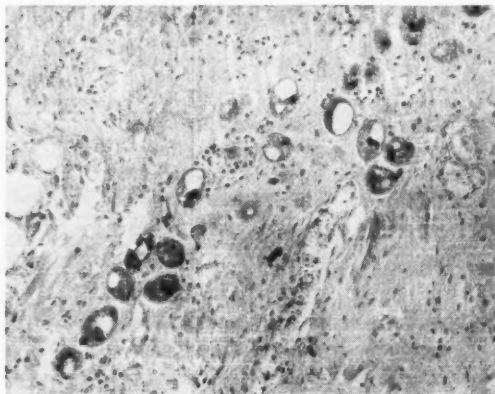
(Continued on page 32)

SOME LESS COMMON PARASITIC AND MYCOTIC INFECTIONS

Oscar Felsenfeld, M.D., and Alvin Groupe

*From the Department of Pathology and Bacteriology
of The Chicago Medical School*

IF one should list all less common infections of parasitic and mycotic origin, a textbook of considerable size would result. This article, therefore, is restricted to such rarely observed diseases which occur in the area of Chicago, and which have recently attracted the attention of medical circles. Less common infections observed in persons returning from subtropical and tropical regions, but which will not spread in the colder climate and better hygienic conditions prevailing in Northern Illinois, are not described in this place.



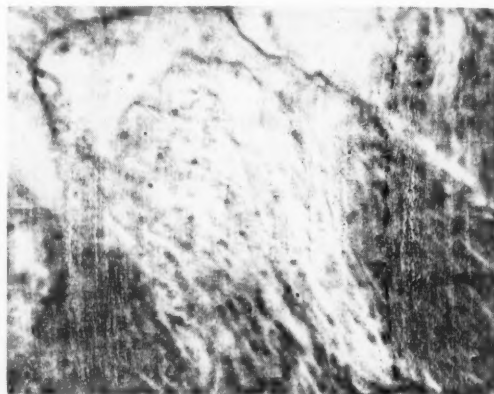
Section of intestine with numerous *Balantidium coli*. x100.

I. BALANTIDIASIS.

Etiology: *Balantidium coli*, a ciliate protozoan. It is slightly asymmetrical, 50 to 100 microns long, and equipped with a longitudinal row of cilia. There is a kidney, or sausage shaped macronucleus and a small micronucleus. The body of the parasite harbors food vacuoles, contractile vacuoles, peristome and cytostome leading into the cytopharynx, and a cytophage. The cyst contains only one *Balantidium*, which loses its cilia and its vacuoles. The cyst is roundish, 30 to 60 microns in diameter.

Life cycle: *B. coli* multiplies by binary fission in the musosa and submucosa of the large, and less commonly, the small intestine of man and hogs. Cysts are formed, which pass out with the feces. The cysts are very resistant and may survive for two or three weeks. Infection of man results from swallowing food contaminated

with such cysts. Man is considered only an accidental host for the organism.



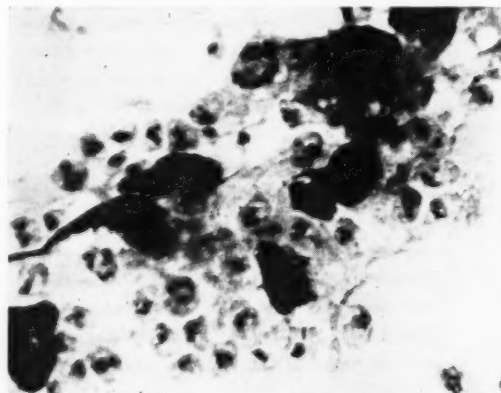
Section of Miescher's tube in skeletal muscle, showing the inner part of the tube with longitudinal spores of *Sarcocystis rileyi*. x1,000.

Symptomatology: The disease caused by *B. coli* in man cannot be distinguished from amebic dysentery without a laboratory examination of the feces. The prognosis in the U. S. A. is good.

Treatment: Atabrine and carbarsone, iodine preparations used in the therapy of amebiasis, are used.

II. SARCOSPORIDIOSIS.

Etiology: The organism, *Sarcocystis*, belongs to the order Sarcosporidia, subclass Acnisporida of the class Sporozoa. Sarcosporidia form elon-



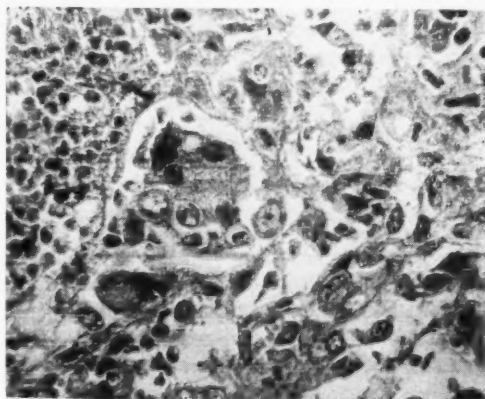
Smear from brain showing a disintegrated pseudocyst of *Toxoplasma*. x1,100.

gated tubular masses of spores called "Miescher's tubes." These tubes have an outer membrane from which radial trabeculae thrust into the interior, creating separate chambers which are filled with longitudinal spores in various stages of development (Rainey's corpuscles). The spores originate from sporoblasts.

Life cycle: Sarcosporidia are widely distributed in vertebrates. The striated muscles are invaded. Liberated spores, when ingested, penetrate the intestinal wall and reach the muscles by way of the lymphatics.

Symptomatology: A toxin called sarcocystin is formed which, however, does not seem to be very dangerous to man. Except in those cases accompanied by local edema and infiltration, no symptoms are observed. The parasite is found in the heart or skeletal muscles, accidentally, during autopsy.

Treatment: Local therapy is recommended.



Section of lung showing edge of Blastomycotic granuloma with giant cells. *Blastomyces* are present in the giant cells and also in the granulomatous material. $\times 1,000$.

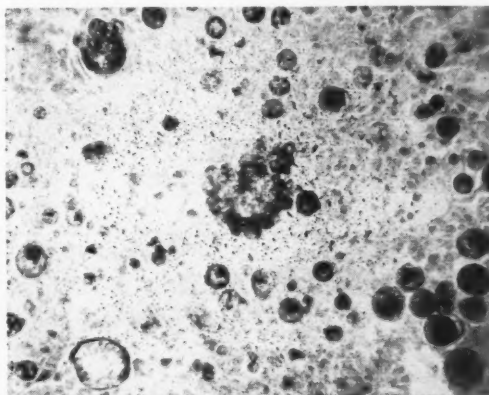
III. TOXOPLASMA.

Etiology: The taxonomic position of the causative organism is uncertain. Some authors believe it is a protozoan, while others classify it as a mycotic agent. The organisms are found mainly in the central nervous system, either singly or in masses called pseudocysts. *Toxoplasma* are mostly oval shaped, with a nucleus usually perpendicular to the longitudinal axis of the organism. The nucleus is oval, pyriform or round, less often irregular.

Life cycle: Little is known about the mode of entrance of the organism. It is probably transferred from animal to man; mainly from rodents or chicken. There is also a congenital

infection from apparently healthy parents.

Symptomatology: In infants there is an acute or subacute encephalitis with pronounced neurological symptoms, sometimes with hydrocephalus and often with optic nerve involvement. In adults, the neurological involvement is minimal, the conspicuous lesions occurring in the abdominal and thoracic viscera, and often diagnosed as



Section of liver with *Coccidioides immitis*. Different stages of development are seen, disseminated in the necrotic tissue.

"virus pneumonia." Protective and alexin-fixing antibodies are demonstrable in the blood.

Treatment: Sulfapyridine was suggested.

IV. BLASTOMYCOSIS.

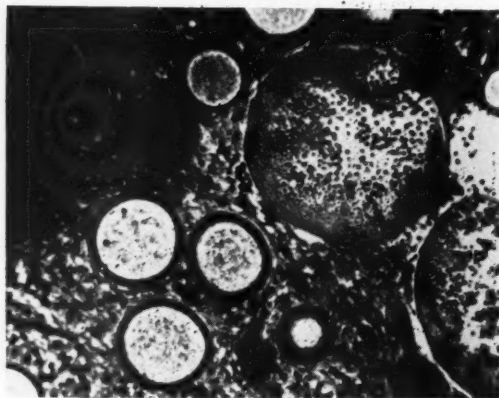
Etiology: The North American type of the infection, Mississippi Valley blastomycosis, also called Gilchrist's disease, is caused by budding yeast-like cells, *Zymonema dermatitidis* or *Zymonema capsulatum*. In the tissue, oval or ovoid, thick walled simple or budding forms, single or in groups 5 to 20 microns in diameter, are found. In culture, the growth is first yeast-like, then septate, branching hyphae with many conidia, raquet mycelium and terminal or lateral chlamydospores are observed.

Life cycle: The agent usually enters the body following a trauma. Horses and cattle may spread it.

Symptomatology: There is a predominantly granulomatous lesion which is acute or chronic, cutaneous or systemic. The cutaneous lesions may be primary or secondary, the primary form manifesting itself as papulo-ulcerative, verrucous or papillomatous, or gummatous. The secondary form is mainly ulcerative. The prognosis of the primary cutaneous forms is benign. Systemic blastomycosis with a picture resembling

ling tuberculosis of the lung, bone, meninges, liver, etc., is usually fatal. The diagnosis is easily established by laboratory examination of the pus, sputum, etc.

Treatment: Iodides, X-ray and local measures are used.



Section of the nasal polyp with *Rhinosporidium*. Growing and mature cysts are seen. x4,000.

V. COCCIDIOIDAL GRANULOMA.

Etiology: The causative organism is *Coccidioides immitis*. In tissues, the organisms are thick walled, spherical cells of 2 to 80 microns in diameter, not budding, but reproducing by the formation of endospores (ascus). The wall of the ascus is often radiated. In cultures, separate branching hyphae, hyphal swellings, arthrosporous cells, chlamydospores, raquet mycelium, terminal hyphospores, and endogenous spores are formed under anaerobic conditions.

Life cycle: The spores may enter the body thru skin lesions or by inhalation. The organism, probably deposited by cattle, sheep, rodents and canines, is present in hot, dry places such as the San Joaquin Valley.

Symptomatology: The disease has a varying clinical picture. It may be localized or generalized; cutaneous, pulmonary, osseous, meningeal, gastro-enteric, or a combination of any of these forms. The tissue reaction is granulomatous, proliferative and suppurative, resembling tuberculosis and blastomycosis. The dermal lesions are therefore nodular and ulcerative; the subcutaneous types resemble cold abscess or tumor; the pulmonary and bone infections imitate tuberculosis, and the gastro-intestinal lesions are similar to those of typhoid fever. The lymphatic invasion resembles leukemia, lymphosarcoma and Hodgkin's disease. One type of coccidioidal

granuloma, called "Valley fever" or "Desert fever," is usually benign and consists of influenza-like symptoms accompanied by erythema nodosum. The diagnosis is based upon the coccidioidin test and finding the organism.

Treatment: The benign acute "Desert fever" clears up spontaneously. Primary cutaneous lesions heal after local treatment. Chronic cases and combined invasions are often fatal in spite of the use of iodides, X-ray, anatomy, coccidioidin and sulfanilamide.

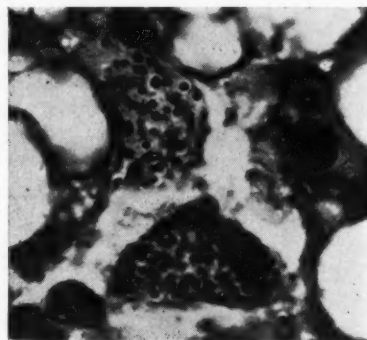
VI. RHINOSPORIDIOSIS.

Etiology: *Rhinosporidium seeberi*. In the tissue, the organism appears first as a small cyst with a thick wall. It is about 5 to 8 microns in diameter. The protoplasm is vacuolated and a vesicular nucleus is observed. This cell enlarges to 40 to 60 microns and the nucleus divides into four. The cyst grows until it reaches over 200 microns in diameter, while the nuclei divide until they number about 4,000. The cell then ruptures, liberating the spores to invade other tissues and repeat the cycle.

Life cycle: The disease may be transferred from man to man. It is found mainly in sand workers and water divers. The ways and means of transfer are not known. In the infected body, the spores spread through the connective tissue by way of the lymphatics.

Symptomatology: The polypoid, raspberry-like papillomatous, very soft, very vascular projections cause frequent bleeding but no pain. They occur in the nose, nasopharynx, eye, ear, shin, and outer genitalia. The diagnosis is made by biopsy. The organism has not as yet been cultivated.

Treatment: Surgical.



Section of liver. *Histoplasma capsulatum* present in the Kupffer cells. x1,500.

(Continued on page 32)

ALLERGY AND IMMUNITY IN TUBERCULOSIS

Irwin S. Nieman, Ph.D., M.D.

*Professor of Bacteriology and Public Health
The Chicago Medical School*

HISTORICAL Considerations: Robert Koch was the first to emphasize the relationship between the hypersensitivity of tuberculous individuals to the disease process. The series of events that is characteristically called the Koch phenomena, led him to conclude that the hypersensitive state was necessary to resistance to this infection. The experimentation which led him to these conclusion is too well known to take up time in this presentation. In the work of A. K. Krause in this country is manifest the influence of Koch's original work. The general feeling of the independence of allergy and immunity in tuberculosis among the profession in this country is directly traceable to the writings of Krause. Not until 1929, with the initial appearance of the work of Rich and his collaborators was direct evidence introduced that immunity in tuberculosis was not as dependent upon allergy as the previous work of Koch, Krause, and others led us to believe.

The Immunology of Tuberculosis.

1. *Innate immunity.* This term signifies a type of resistance which is characteristic of species of animals, races of man and individuals. That there is an immunity in certain species of animals to certain types of tubercle bacilli is recognized by all. This explains the crude division of tubercle bacilli into the avian type, human type, bovine type, and cold-blooded type. That there exists a relative immunity from this disease in certain races of man, particularly the white race, is also more or less agreed upon. That there is individual immunity, that is that certain human beings are so constituted for reasons that we can only theorize about at the present moment, that they simply do not acquire the disease even when exposure is relatively excessive, is also recognized.
2. *Acquired immunity.* Immunity may be acquired either actively or passively.
 - (a) *Active immunity.* This type of acquired immunity may be the result of either
 - (i) *Natural means* indicated by the acquisition of the disease and subsequent recovery.

ery. It is not necessary that the disease have been present in a clinically recognizable state. It is this series of events that most adults of the white race have experienced with regard to tuberculosis, or by,

- (ii) *Artificial means* which is acquired by some form of vaccination. We shall not dwell upon this particular method of producing an active immunity to tuberculosis at the moment, since we shall come back to it later.

(b) *Passive immunity.* This type of immunity is again divided into two categories. It may either be acquired;

- (i) *Congenitally*, that is, a passive transfer of anti-bodies from the mother to the fetus. Whether or not this occurs in tuberculosis, we do not know but there is no reason to assume that it does not since it is so common a form of passive immunity in other infectious diseases.

- (ii) *Artificially.* This type of passive immunity, of course, means the introduction of antibodies into the recipient from some outside source. In other diseases this means is used either for prophylaxis or for therapeutics. In tuberculosis neither of these objectives have been satisfactorily obtained by the use of this method of passive immunization.

3. *Immune phenomena.*

(a) *Serology.* In a discussion of the serology of tuberculosis, we must consider the situation from three general aspects.

- (i) *Accepted antibody types.* It has been possible to demonstrate a variety of antibodies in the circulating blood of animals and of human beings suffering from this infection. Particular emphasis has been placed on agglutinins and on complement fixing antibodies. There has been considerable difficulty from a technical point of view in showing the presence of these anti-substances, principally because of the inability to prepare the tubercle bacillus in a suitable antigenic state.

(ii) *The relationship of circulating antibody to protection.* This, of course, is of great importance in any discussion of immunity in this disease. Up to the present time it has not been possible to demonstrate that any of the ordinary antibody types give a measure of the resistance of the body to tuberculosis. As a matter of fact, in experiments now in progress, it has been possible to demonstrate that protection is present in animals that have been vaccinated even though no complement fixing antibodies are present in the circulating blood; that is, not present in sufficient amount to be demonstrable by our technical methods.

(iii) *Diagnostic value.* Another question that arises with regard to the circulating antibodies is whether or not their presence or absence is of any significance in aiding the diagnosis of tuberculosis. We might point out that here there is some difference of opinion. However, since the experimental results have been so controversial, there has been advocated no serologic test which we can put to routine use.

(b) *Hypersensitivity.* This term denotes the excessive reactivity of certain individuals to substances which ordinarily do not elicit reactions.

(i) *Allergy of infection.* In this category of hyper-sensitivity, we place the excessive reactivity of individuals with certain infectious diseases to substances which can be extracted from the specific etiologic agent of the disease. In tuberculosis such a reaction occurs and is elicited by a substance commonly known as tuberculin.

(ii) *Tuberculin.* Tuberculin was originally described by Robert Koch. As you know, it is produced by tubercle bacilli when grown in a fluid medium for a sufficient period of time. It can also be extracted from the whole cells by suitable means. We believe that tuberculin is probably elaborated in the body of an infected individual and accounts for his sensitization to this substance. Although its chemical nature has not been definitely determined, there is considerable evidence that it is a protein substance. It has been prepared in more or less of a pure state by Florence Seibert

and her co-workers. Their product is generally referred to as P.P.D. to distinguish it from the term O.T. which is reserved for tuberculin prepared by the original Koch technique.

(iii) *The significance of the tuberculin reaction.* We may discuss this phase of the problem under three main headings:
first, *its diagnostic value.*

If the reaction is;

negative, the individual tested does not have the disease at the time;

positive, infection is present but neither the degree of positivity as measured by titration, nor the intensity as measured by size, give any indication of the activity of the disease at the time. However, a positive test in children often is an indication of the acquisition of a primary infection.

Negative but subsequently changes to positive, this sequence of events in any age group dates the acquisition of the disease. This particular use of the test for diagnosis is only feasible in individuals that are regularly and repeatedly tested.

second, *its significance for infection.*

If the reaction is;

Negative, there are no tubercle bacilli present,

Positive, there are tubercle bacilli present. These may be either alive or dead. *Positive but subsequently changing to negative.* On the basis of what we have said, this type of change would indicate that the lesion which initiated the reaction has healed to the point that tubercle bacilli have disappeared.

third, *In relation to immunity*, it is to be conceded, we think that allergy and immunity do exist coincidentally. This becomes immediately apparent when we consider that both these phenomena stem from the same source; namely, the tuberculous lesion. It should be emphasized that for all practical considerations the only individual that has immunity to tuberculosis is he who has a lesion, and it should be further emphasized that the immunity is not dependent upon the activity of the

(Continued on page 31)

PITUITARY INNERVATION AND ITS PHYSIOLOGICAL SIGNIFICANCE

W. E. MacFarland, Ph.D.

Associate Professor of Microscopic Anatomy

The Chicago Medical School

TO Vesalius, the father of Anatomy, we are indebted for the name given to the pituitary gland. While the name is a hold-over from the time when the pituitary was considered to be merely a production center for mucus, instrumental in lubricating the mucus membranes of the throat and naso-pharynx, it still has some preference to the term "hypophysis," which has been used to designate that part of the gland arising from the buccal ectoderm. When Schneider in 1660 discredited the theory of phlegm formation, the gland was, for a time, classified as a vestigial relic. Only within recent times has an appreciation of its considerable importance been gained. In 1886, Pierre Marie definitely linked the excessive overgrowth of certain individuals to enlargement and hyperactivity of the pituitary gland. Since that time, gigantism has been identified with excessive secretion of this organ. A mere 6 feet, 6 inches, which graces our basketball courts is not pathological, although it does represent a decidedly active anterior lobe during the growing years. Just why the "growth hormone" is released without check in some instances while, normally, it fits into the developmental scheme of the individual is one of the basic questions of medicine. It is, therefore, of paramount importance to determine the factors which regulate pituitary secretions.

As experimental evidence gradually gained showed the manifold effects upon other glands—thyroid, gonads, mammary glands, adrenal cortex, etc.—the pituitary became known as the master endocrine gland. It is now clear that the pituitary is not a clock-like automaton but responds to, (a) stimuli of chemical substances in the blood stream, and (b) nervous stimulation. It is the purpose of this article to review some of the recent work pertaining to the relative importance of these two sources of stimulation.

The pituitary gland develops from two main primordia, one an evagination of the mid-ventral wall of the diencephalon to form the pars nervosa and infundibular stalk, and the other from the underlying and contiguous buccal ectoderm

to form the pars distalis, pars tuberalis and pars intermedia. The two main parts of the gland are the pars nervosa (posterior lobe), and pars distalis (anterior lobe).

The anatomy and functional connections of the posterior lobe are understood with some clarity. This part of the gland, arising directly from the central nervous system, would be a natural recipient of nerve fibers. In 1893, it was first noted that damage to the posterior lobe resulted in considerably increased urination. Diabetes insipidus has now been traced to dysfunction of the pars nervosa. Pituicytes are believed to be the source of the hormone which acts on the kidney tubules to prevent excessive water loss. The problem has been pretty well resolved by Ranson's school. (See Fisher, Ingram and Ranson, 1938.) They reviewed the whole problem experimentally and showed this particular secretion to be activated by certain nervous pathways from the hypothalamus to the posterior lobe, the supraoptico-hypophyseal and the tubero-hypophyseal fibers being the most important. Of especial interest is the fact that they demonstrated the extent to which this secretion is dependent on the nerve supply. Section of the stalk or ablation of the supraoptic nuclei resulted in degeneration of the glandular cells of the posterior lobe with the prompt onset of diabetes. Loss of the oxytocic and vasopressor principles also occurred.

The pars distalis has been a more complex problem. That it is a separate gland is shown by its origin, structure and many secretions. The number of active principles which have been attributed to the anterior lobe exceeds by far the number of glandular cell types found in the organ. The three main cellular types identified are the acidophil, basophil, and the chromophobe. It is therefore evident that, as with many other glands, some one cell type must produce several important factors. Histologically, the anterior lobe is highly vascular, a feature in harmony with its endocrine nature. Functionally, this means, of course, that the glandular

secretions can be poured directly into the blood stream and also that its secretory cells can be activated through the blood stream. In some glands (i.e. adrenal cortex), this is the sole source of control (MacFarland, '44). There would also seem to be no binding reason why the anterior lobe of the pituitary should receive secretory nerves. If such should actually be true, then the pituitary gland could be further likened to the adrenal gland which is a double structure, one part richly innervated, the other lacking a nerve supply.

As interesting as this comparison can be, the facts do not warrant any such unqualified conclusions at present. Actually, there is a considerable body of physiological evidence to support the idea of secretory control of the anterior lobe from the nervous system.

Photoperiodicity and Photoperiodism

(Greulich, '45)

The effect of light on the growth and reproduction of plants and animals has been studied systematically only since 1920. Rowan observed in 1925 that the gonads of birds (juncos and crows) respond to an environment of increased illumination in the autumn months by maturing and becoming sexually functional. This phenomenon has been investigated extensively by Bissonnette who introduced the term photoperiodicity in 1930 to apply to this cyclical behaviour in animals. Since then, he has studied the reproductive cycles of many birds and mammals as affected by the degree and extent of illumination. In the starling, he showed the testicular changes, which normally follow a uniform pattern, were correlated to a remarkable degree with the daily periods of light throughout the year. These changes appeared to be independent of other known environmental factors such as temperature, barometric pressure, etc. By artificial illumination, the amount of light to which the birds were exposed could be controlled. Growth or regression of the testes was possible by such control at any time of the year. Ferrets were also exposed to this night lighting. These animals, which normally breed only around the first of March, responded to increased lighting in the autumn and winter months by several fertile matings.

It has been further shown that certain structures are necessary for this response to light. Removal of the retina or simply using an opaque

hood will prevent this response, thus indicating the role of the eyes. The anterior lobe of the pituitary is also necessary. The conclusion has been, therefore, that impulses over the optic nerves in some way are transmitted to the anterior lobe of the pituitary which, in turn, regulates the growth and maturation of the reproductive organs by means of its gonadotropic and other hormones.

Hypothalamus as Possible Source of Nerve Supply to Anterior Lobe.

Behaviour of the reproductive cycle in women has long been known to be subject to variations directly referable to mental states. Worry, fear and other emotional states often disturb the regularity of menstruation and ovulation, and may produce marked cytological changes in the genital tract. In rabbits, ovulation is produced by sexual excitement (Brauball and Parkes, '32). Experimentally, it has been shown in rabbits and rats that stimulation of the hypothalamus in the tuberal or supraoptic regions will result in ovulation (Harris, '37; Haterius, '37). This effect is abolished by transection of the stalk. Brookhart and Dey ('41) demonstrated in guinea pigs that lesions in the hypothalamus reduced the sexual activity practically to zero, although the testes and seminal vesicles remained intact. Dempsey and Uotila ('40) observed in the same species that the sexual cycle continued after transection of the stalk but that it was not responsive to certain environmental changes—exposure to cold—such as in intact animals.

Vidian Ganglion

The Vidian ganglion has been investigated by Zacharias ('41) and Rosen ('42) as a possible source of fibers to the anterior lobe of the pituitary. This ganglion is formed by the junction of the greater superficial petrosal and the great deep petrosal nerves. It supplies short branches to the sixth cranial nerve, the internal carotid plexus and the capsule of the anterior lobe. It is connected with the sphenopalatine ganglion by the Vidian nerve. Anesthetization of the nasal mucosa or removal of the sphenopalatine ganglia in rats resulted in pseudo-pregnancy and increased sensitivity to insulin, both indicative of dysfunction of the anterior lobe. The authors believe this provides a pathway by which the nasal mucosa affects the gonads through the pars distalis.

Cervical Sympathetic Trunks

The sources heretofore considered were, with the exception of the great deep petrosal nerve, classified as parasympathetic. The sympathetic nervous system has been thought to supply fibers to the anterior lobe by many investigators. Uotila ('39) concluded that the cold reaction of the thyroid gland was mediated by the action of the cervical sympathetics on the anterior pituitary. Friedgood and Cannon ('40), repeated an experiment originally performed in 1915 whereby the central stump of the phrenic nerve was anastomosed to the peripheral cervical sympathetics in cats. The resulting syndrome, as originally described, consisted of the essential symptoms of Graves' Disease. The tachycardia, increased B.M.R., exophthalmos, etc., were at first thought to be due to the hyperactivity of the sympathetic fibers on the thyroid gland but, since it has been pretty well shown that the thyroid receives no direct innervation to its glandular cells, these effects have been attributed to the thyrotropic action on the anterior lobe of the pituitary. The implied conclusion is that the anterior lobe must receive sympathetic nerve fibers. These authors significantly found in the two successful operations that cutting the regenerated phrenic nerve resulted in a return of the B.M.R. to normal.

Final Pathway

All the physiological evidence pointing to an innervation of the anterior lobe would, of course, be subject to reinterpretation were it not possible to show nerve fibers entering this gland. The anatomical demonstration of such fibers has been a difficult problem. The fact that many investigators have been unable to find nerves in the anterior lobe is no reason to discontinue the search. Brooks and Gersh ('38), reported finding a few fibers ending around the acidophil and basophil cells. Truscott ('44) described a sizable nerve supply to the pars distalis of the rat. Some 2000 fibers were counted, entering by way of the blood vessels, infundibular stalk and hypophyseal fasciculi. Drager ('44) made a more extensive survey of the pituitaries of mammals and observed a great scarcity of fibers in all forms studied. Whenever present, nerve fibers were seen chiefly at the periphery in company with blood vessels. In the bird and porpoise, where the pars distalis and pars nervosa are completely separate, no

nerve fibers were visible in the anterior lobe. He suggests that the secretions, at least in these two forms, are controlled through the blood stream.

From the evidence herein reviewed, it is apparent that the anatomical confirmation of nervous pathways to the anterior lobe of the pituitary gland leaves much to be desired. This is in contrast to the relatively clear-cut demonstration of nervous control of the secretions of the pars nervosa. The phenomena of photoperiodicity and the various clinical syndromes which have been ascribed to dysfunction of the pars distalis seem to weigh heavily in favor of a secretory innervation. However, until such a nerve supply can be satisfactorily demonstrated, the physiological evidence will always be tinged with doubt. Several possible reasons why such a nerve supply has not been clearly shown may be mentioned: (a) The fibers could be submicroscopic; (2) The few fibers which have been reported may be vasomotor or even reticular fibers; (c) no secretory innervation exists and all the physiological evidence presented must be explained on some other basis. To sponsor any one of these explanations is to be dangerously dogmatic. The present writer, however, favors the third possibility at present because, (1) similar glands (adrenal cortex, thyroid, etc.) have no secretory innervation, and (2) several investigators have shown that many effects attributed to the anterior lobe are really controlled by the hypothalamus. For instance, Frohlich's syndrome, commonly associated with damage to the anterior lobe, is now traced to the region of the median eminence in the hypothalamus. Likewise, Dey ('43) found in guinea pigs that extensive lesions of the hypothalamus just behind the optic chiasma interfered with the sex cycle whenever the median eminence was damaged. There was loss of the luteinizing hormone and hypertrophy or atrophy of the genital organs. In only one animal was there any damage to the anterior lobe of the pituitary. In 14 animals, in which the lesions were placed in the anterior lobe, only two lost their cycles. In these two animals, the median eminence was also damaged.

Further work on this problem is definitely indicated. The method of transplantation of the hypophysis should yield valuable information.

(Continued on page 33)

DIAGNOSIS AND IMPORTANCE OF INTESTINAL PROTOZOA

Viola Mae Young, M.S.

*Instructor of Bacteriology and Parasitology
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ONE of the commonest causes of dysentery, overlooked perhaps more frequently than any other, are the protozoan parasites. The reasons for this apparent slight may be numerous, but the most important of them may be enumerated as follows: 1. The former conception of amoebiasis which pictured the disease only in its typical most easily recognizable form. 2. The slowness with which it was realized that this disease is not only tropical in occurrence, but also is prevalent in temperate areas. 3. The lack of trained personnel to identify these parasites when the physicians become aware of the possibility of their presence. 4. Improper means of collecting material for examination. Chicago's awareness is somewhat keener than other similar areas, having been stimulated by two severe epidemics, the first well-known episode occurred during the World's Fair, and the second the result of the stock yard's fire when untreated amoeba-infested water was consumed. During recent months, however, the medical profession has found it necessary to renew its interest in many diseases formerly considered to be only tropical in nature, due to the frequency of dysentery among troops in overseas areas and the impressive publications in contemporary literature.

There are two types of protozoa commonly found in the intestinal canal of man: amoebae and flagellates. Amoebae are unicellular animals which use pseudopodia as means of locomotion. Five types of amoebae are to be found in the intestine, namely, *Endamoeba histolytica*, *Endamoeba coli*, *Endolimax nana*, *Iodamoeba butchlii* (*williamsi*), and *Dientamoeba fragilis*. Amoebiasis is caused by the first, *Endamoeba histolytica*. In order to correctly diagnose this disease, it is essential to be thoroughly acquainted not only with *E. histolytica*, but also with all of the other amoebic forms inhabiting the intestines with which the causative agents might be confused.

Most of the amoebae occur in three forms: the motile trophozoite form, the precystic form and the cystic form. Motile forms are found in the intestines when conditions are favorable for growth and usually are present in liquid or soft stools. When conditions become unfavorable the

amoeba goes into a precystic stage wherein it rounds up and extrudes ingested material. It then secretes a cyst wall and undergoes nuclear division thereby developing into the cystic stage.

As the morphology is different in each stage, all of the stages of each amoeba must be understood before accurate diagnoses can be made. The motile form of *E. histolytica* is a colorless, hyaline body varying from about 15 to 60 microns in diameter. In a freshly passed specimen where the movement is optimum, they appear as rapidly moving bodies often described as "slug-like" or "ribbon-like," always progressing across the field. As the movement becomes slower, slender finger-like pseudopodia are explosively protruded. A clear differentiation between the endoplasm and ectoplasm is apparent. The nucleus is only rarely seen in unstained specimens. The whole appearance of *E. histolytica* tends to be more fragile than that of other amoebae. Very little ingested material is seen in the endoplasm, but the presence of ingested red blood cells establishes the diagnosis of *E. histolytica*. Though not all *E. histolytica* trophozoites contain red blood cells, this amoeba is the only one which ingests them. The precystic form, because of its extrusion of foreign material, never contains the red blood cells or bacteria. It is round, having a large nucleus and hyaline protoplasm. The cystic form, measuring 6 to 20 microns in diameter, is characterized by the occurrence of one to four nuclei, and chromatoid bodies having blunt ends are present in some cysts. In unstained specimens the nuclei are not visible in the greenish cytoplasm.

Endamoeba coli differs from *E. histolytica* in a number of ways. The motile form is coarser in appearance and ingests many bacteria, though never red blood cells. There is no differentiation between the endoplasm and ectoplasm; the movement is slow and never progressive. The nucleus is frequently visible in the unstained specimen, both in the trophozoites and cysts. The cysts, measuring from 10 to 33 microns in diameter, contain from one to eight nuclei, exceptionally sixteen. Often slender, sharp-ended chromatoid bodies occur in the granular cytoplasm.

Intestinal protozoa



Endamoeba histolytica



Endamoeba coli



Endolimax nana



Iodamoeba williamsi

Dientamoeba fragilis



Giardia

lamblia

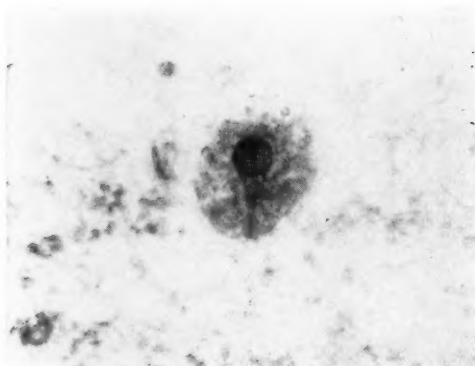
Chilomastix mesnili



Enteromonas hominis

Embadomonas intestinalis Trichomonas

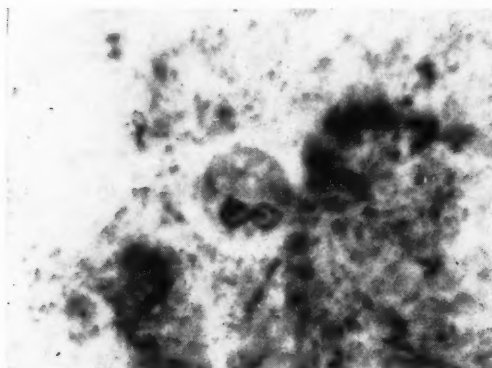
Dr. O. Felsenfeld



(1) *Endamoeba histolytica*, trophozoite x2,000

Endolimax nana is usually smaller than either of the aforementioned amoebae, the trophozoites being from 6 to 45 microns in diameter. The motility is slow and never progressive. There is clear differentiation between the endoplasm and ectoplasm. This motile form is quite difficult to distinguish from that of *E. histolytica*, provided that the latter's movements had become slowed. Ingested material, including bacteria, is present. The nucleus is occasionally visible in the unstained specimen. The cyst, containing one to four nuclei and measuring 5 to 14 microns in diameter, has no chromatoid body. The cystoplasm is hyaline in appearance. Many of the cysts are oval in shape.

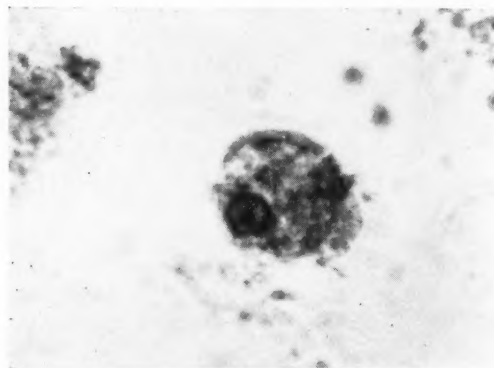
Iodamoeba butchlii is a sluggishly motile amoeba varying from 8 to 20 microns in diameter. In freshly passed specimens there may be some progressive movement by means of broad, blunt, hyaline pseudopodia. There is clear differentiation between the endoplasm and ectoplasm. The



(2) *Endamoeba histolytica*, cyst with two nuclei x2,000

nucleus is usually visible only in stained material. The cyst is characterized by the presence in it of large glycogen vacuoles which stain dark in iodine preparations. Another feature of the cyst form is the failure of the amoeba to become round as it encysts. Many forms and shapes occur. There is one nucleus present and no chromatoid body.

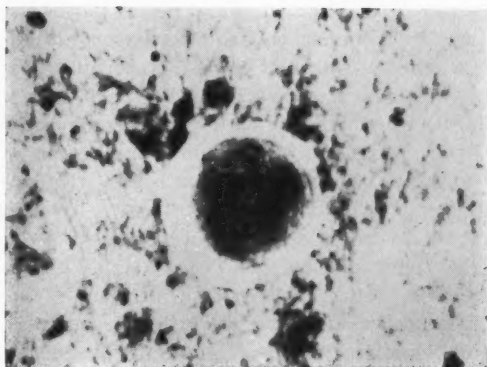
The only other amoeba, aside from *E. histolytica*, which has been incriminated as a possible pathogen, is *Dientamoeba fragilis*. This comparatively small amoeba is actively motile in freshly passed specimens. The pseudopodia are broad and leaflike in character, having serrated or indented margins. An important diagnostic feature is the presence of two nuclei in many of these amoeba, though they are not usually visible in unstained material. The appearance of the cytoplasm is quite fine and colorless with a small amount of ingested material present.



(3) *Endamoeba coli*, trophozoite x2,000

Other types of protozoa commonly found in the intestinal canal of man are the flagellates. *Giardia lamblia*, *Chilomastix mesnili* and *Trichomonas hominis* are frequently encountered, and *Embadomonas intestinalis* and *Enteromonas hominis* less often.

Giardia lamblia trophozoites are shaped like a pear cut in half, being rounded at one end and tapering to a point on the other. They are from 9.5 to 21 microns in length by about 5 to 15 microns in breadth. The dorsal surface is convex, while the ventral surface is concave, much of the latter being occupied by a sucking disc. *G. lamblia* is very actively motile by means of eight flagella which are not seen until the activity is very slow. When the motility has ceased there is a strong resemblance between these colorless



(4) *Endamoeba coli*, cyst with four nuclei x2,000

hyaline bodies, which tend to round up and extend small pseudopodia, and an amoebic form. The cysts of this parasite are oval bodies 8 to 12 microns by 7 to 10 microns and having a double outline. They are colorless and hyaline and contain refractile objects in the cytoplasm composed of the axoneme and 2 to 4 nuclei.

The trophozoites of *Chilomastix mesnili* are elongated pear-shaped organisms measuring from about 8 to 20 microns in length to about 3 to 10 microns in breadth. A spiral groove extends diagonally around the body from the anterior to posterior ends. The motility is rapid and jerky; the flagella are usually not visible in the unstained preparations. There is a cytostome present. Cysts of the *C. mesnili* have a double outline and are from 7 to 10 microns in length by 4.5 to 6 microns in breadth. They are colorless and lemon shaped, having a blunt projection or tip at the smallest end. Little of the inner structure is to be seen before staining.

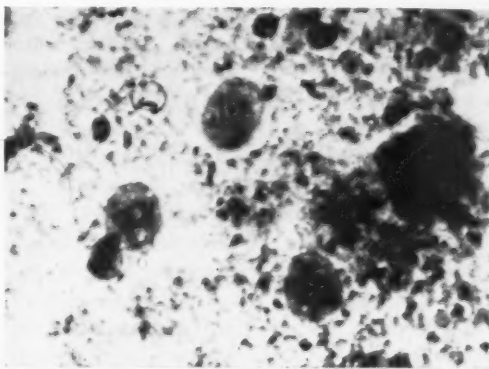
Trichomonas hominis is a pear-shaped organism measuring 7 to 15 microns by 3 to 5 microns. Extending from the anterior to the posterior end is a hyaline appearing body which protrudes from the posterior tip to form a short tail-like structure. Anteriorly there is a small cleft, the cytostome. This flagellate is actively motile by means of 3 to 5 anterior flagella and an undulating membrane. No cyst form has been discovered.

The trophozoite form of *Embadomonas intestinalis* is round or oval, measuring from 4 to 9 microns in length by 3 to 4 microns in breadth. At the anterior end there is a cleft, the cytostome. This actively motile organism has a granular, sometimes greenish cytoplasm. The cysts are hyaline oval or lemon-shaped bodies, having

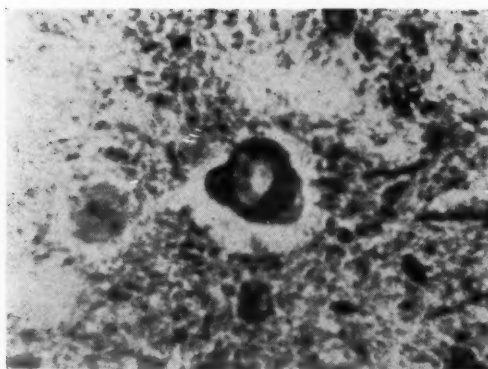
a double outline. They measure 4.5 microns by 3 to 4.5 microns. No structure is seen in unstained preparations.

Enteromonas hominis has a round, oval or pear-shaped trophozoite measuring 4 to 10 microns in length by 3 to 6 microns in breadth. The body is slightly flattened along one side and is colorless in appearance. Motility is progressive, rapid and jerky. The cysts are oval and measure 6 to 8 microns by 3 to 4 microns. They are colorless and have a doubly outlined wall.

Aside from the procedure used in most laboratories of examining the fecal material in the fresh state under both saline and iodine, other diagnostic aids are earning popularity through proven results. Among the best of these is the permanently stained slide. They offer numerous advantages, not the least of which is the elimination of one of the greatest difficulties presented by stool specimen examination for parasitic protozoa. Slides may be prepared and placed in a fixative within a few moments after the arrival of the specimen at the laboratory or fixative may be supplied to the physician so that he may prepare and fix freshly pressed or proctoscopic material immediately, thereby eliminating deterioration of the parasites which makes their identification so difficult. A second advantage offered by the stained slide is the opportunity it affords the parasitologist to make a careful study of the inner structure of the protozoa. Nuclei and position and character of karyosomes are important diagnostic features of protozoa; the stained specimen demonstrates these features clearly. A third reason that a permanent stain is advantageous is that such slides, if preserved, are a permanent record which may be referred



(5) *Endolimax nana*, three cysts x1,500



(6) *Iodamoeba butchlii*, trophozoite, x1,520

to or studied at any future time it may be desired. Several staining methods give satisfactory results, the original procedure of Heindenhein being perhaps the best. This procedure is, however, too time-consuming for a routine laboratory. The shorter methods of Johnson or Mallory's phosphotungstic acid hematin stain both give good results and have the advantages of being performed in much less time.

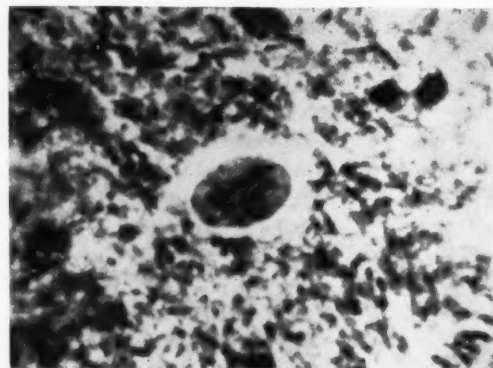
The accompanying photographs were taken from slides stained with Johnson's hematoxylin and illustrate clearly the clarity with which it is possible to observe the internal structure of the protozoa in such stains.

The parasites in the photograph of Dr. O. Felsenfeld's poster were drawn from protozoan forms as they occur in hematoxylin stained slides. Differential characteristics in each case are clearly indicated.

The clinical importance of intestinal protozoa varies according to the geographic position of the place where the patient lives. While before this war only one or two per cent of the population of Middle and North Europe suffered from protozoan dysentery, Central America shows 40 per cent of the population infested and some parts of Central Africa and China have as much as 80 out of every 100 people infected. Here in the United States, the average occurrence of *Endamoeba histolytica* is estimated between five to twenty per cent, according to the locality. In Chicago, about 7 to 10 per cent of the inhabitants harbor this pathogenic organism. There has been much discussion about "carriers" of pathogenic amebas. Craig, D'Antoni, and others have established beyond doubt that a real, genuine "carrier" status does not exist with *E. histolytica*

because this organism has to derive its nourishment from human tissue. These authors found that only a fragment of the great number of cases shows the classic, text-book picture of amebic dysentery. In all other cases, the disease reveals itself only as a chronic "indigestion" or "intestinal neurosis," most frequently with long-lasting constipation that is occasionally interrupted by short outbursts of diarrhea. Appropriate methods employed in the diagnosis of the incitants of diarrhea have shown that most cases of "idiopathic ulcerative colitis," "mucous colitis" and "intestinal neurosis" are caused, either by chronic infections with *Shigella*, paracolon organisms and *Proteus*, or by *Endamoeba histolytica*, *Dientamoeba fragilis*, *Giardia* and *Chilomastix*. There are also voices advocating the theory that even *Endolimax nana*, *Trichomonas* and the "small flagellates" may irritate the intestine when present in huge numbers. The discussion of such theories, however, would far outreach the frame of this article.

The occurrence of known pathogenic organisms in a very large number of patients with gastro-intestinal disturbances resembling other diseases necessarily compels the modern physician to employ the services of a parasitological laboratory more than ever before. In addition, veterans returning from highly endemic areas of the World, as North Africa, the South Seas, etc., must be checked for amoeba infestations. These factors together place the necessity for a correct diagnosis of intestinal protozoa in a very important position. It is hoped that this article will help some of those who are interested in intestinal diseases, to a better understanding of



(7) *Giardia lamblia*, cyst with two nuclei x1,500

(Continued on page 33)

ELECTRO-ENCEPHALOGRAPHY

Richard S. Kamil

AFTER nine years of trial, clinical electroencephalography has gained widespread acceptance. It is being used by neurologists, brain surgeons, psychiatrists and pediatricians, as an aid in the diagnosis of epilepsy and related disorders and as a painless and entirely safe method of detecting localized damage in the cerebral cortex. Several army induction centers are using it as part of the medical examination to determine fitness for military service. Diffuse changes may be seen in hydrocephalus and in various other conditions associated with increased intracranial pressure, as well as in degenerative states, infections and intoxications.

In 1929, Berger discovered that electrical potential could be recorded from the head of the human subject. In normal subjects, three wave frequencies could be recorded, the alpha, beta and delta rhythms. The alpha waves (10 per sec.) at about 50 microvolts, appear with the eyes shut but are abolished by visual activity or mental effort. It is, thus, concluded that the waves are due to a spontaneous beat of an area of the occipital cortex concerned with pattern vision.

The beta rhythm, is faster (25 per sec.) and of lower voltage, obtained best over the precentral area. The delta waves have a frequency of from 1-5 per sec. and a voltage of from 20-200 microvolts. They are mostly recorded during sleep, rarely while awake in the normal adult. Generally speaking, their presence in an adult, except during sleep, indicates some pathological condition in the brain such as tumor, epilepsy, increased I.C.P. When present, they tend to displace the alpha waves.

The technic of electroencephalography is similar to that of electrocardiology, except that greater sensitivity has been obtained by means of audioamplifiers and more rugged recording units have been devised to withstand the sudden large voltage fluctuations that occur. Small electrode plates are held to the intact scalp by adhesive and electrode paste under the plate keeps the contact under 10,000 ohms' resistance. Electrodes on the ear lobes are used as the standard reference points. A tracing of the voltage fluctuation between any lead on the scalp and the

ear lobes is a monopolar electroencephalogram. The dominant rhythm of 8-13 cycles or waves per second and 10-100 microvolts is called the alpha rhythm.

The E.E.G. (electroencephalogram) after the first decade is similar to that of the adult, but pediatric encephalography is a more complicated subject, requiring familiarity with developmental changes in order to appreciate deviations from normal.

At birth, rhythmic brain waves are absent. Within a few weeks relatively slow irregular deflections appear which increase in amplitude (voltage) during the first few months. This stage is followed by appearance of fundamental alpha waves which gradually increase in frequency but decrease in amplitude. Individual patterns begin to appear at about the 9th year; by the 10th—12th year they are fully developed and the constant pattern, characteristic for each individual, persists throughout life. It is thus apparent that the E.E.G. has a more limited value in younger subjects for determination of cortical injuries.

Attempts have been made to correlate the development of the E.E.G. with other development characteristics, such as myelination, higher visual integrations and the like. Such correlations are, however, not yet established. Up to the present the E.E.G. has not proved useful in measuring intellectual levels or distinguishing different types of mental defects, although definite electrical abnormalities have been found in a large proportion of patients with behavior disorders.

The study of 1,000 normals and 1,200 epileptics reveals that, although some supposedly normal persons show abnormalities of the type encountered in epileptics, certain disorders are so common in epileptics and so rare in normals that they have diagnostic value. It has been shown that a significant proportion of epileptics have normal E.E.G. in their inter-seizure periods. Therefore, like a negative Wasserman, a negative E.E.G. is only suggestive.

Much emphasis is placed on epilepsy because that is the condition which presents the widest range of electroencephalographic abnormalities.

(Continued on page 30)

THE AURICULO-TEMPORAL SYNDROME

Case Report and Discussion

Harold Koenig

An unusual disorder was recently brought to the attention of the author. A student nurse 19 years old complains of reddening and sweating of an area of skin on the left side of her face every time she eats. This has long been a source of embarrassment to her. The application of rouge and powder to this area is difficult and people readily notice the erythema and sweating during meal-time.

The exact date of onset of this condition could not be determined. The girl's mother states that she had been delivered with the aid of an obstetrical forceps and that she had sustained some injury to the left side of her face at that time. For some weeks after a surgical dressing was kept over the wound. Healing finally took place with the formation of a scar. Some months later it was noticed that the left side of the infant's face became red at feeding, but was normal at other times. Until five years ago the subject was troubled with this paroxysmal blushing. Since then, however, the blushing has become less severe; whereas perspiration in this area has become marked.

Examination of the girl's face reveals a pale, relatively uniform complexion. There is some indication of a small scar in front of the left ear; no other abnormalities are noticeable. The chewing of food is immediately followed by the reddening of an area of skin in front and below the left auricle. In a few minutes beads of sweat form in this area. The sweating stops upon cessation of chewing; but the erythema persists for about ten to fifteen minutes.

It is obvious that there is some connection between the erythema and sweating of the skin with the secretion of the salivary glands. Such a peculiar relationship was first described by Baillarger in 1847. Since then, cases of this kind have been infrequently described in the literature. It was not until 1923, however, that L. Frey described several such cases to which he gave the title of the auriculo-temporal syndrome, in the belief that it resulted from an involvement of this nerve.

The cases that have been described in the literature were sequelae of surgery, suppuration,

and penetrating wounds in the parotid region which resulted in an interruption of the fibers of the auriculo-temporal nerve. This was followed by anesthesia of the skin area innervated by the auriculo-temporal nerve. Blushing and sweating during eating appeared in the previously anesthetic area after a variable interval ranging from several months to a year or more.

The characteristic feature of this syndrome is the paroxysmal vasodilation and sweating of a delimited area of skin associated with salivation. At all other times the affected area cannot be distinguished from the surrounding normal skin. The pathogenesis and the mechanism of the auriculo-temporal syndrome are not yet firmly established; although it is evident that the syndrome occurs following regeneration of the fibers of the auriculo-temporal nerve. F. R. Ford has proposed a reasonable explanation which is based upon the functional anatomy of this nerve. At this point, a brief description of the auriculo-temporal nerve is of value.

The auriculo-temporal nerve arises by two roots from the mandibular division of the trigeminal nerve shortly after it emerges from the foramen ovale. These roots pass backward, embrace the middle meningeal artery, and reunite posteriorly to it to form the trunk of the nerve. The nerve courses backward lateral to spine of the sphenoid and medial to the capsule of the temporo-mandibular joint. Behind the joint it turns lateralward to enter the upper part of the parotid gland. It emerges from the parotid gland, crosses the posterior root of the zygoma and then accompanies the superficial temporal vessels into the temporal region. While yet in the infratemporal region, each of the roots of the nerve receive a communication from the otic ganglion. These communications carry postganglionic parasympathetic fibers secretory to the parotid gland. The cell bodies of these fibers are located in the otic ganglion and they receive their preganglionic innervation from fibers that originate in the inferior salivatory nucleus of the medulla oblongata. These fibers enter the glossopharyngeal nerve and pass successively through the

(Continued on page 31)

Personalities



J. Edwin Pasek

J. EDWIN PASEK, 35 Ridgeway Circle, White Plains, New York has been elected as a member of the Board of Directors of the Chicago Medical School in 1939. Mr. Pasek has long been known in the field of education and his executive ability will be welcomed by the Chicago Medical School.

Mr. Pasek received his B.S. from Huron College, South Dakota; A.M. 1922, University of Chicago; 1919-20 Instructor in high school and college; 1920-22 at the University of Chicago; 1922-26, Field Secretary, College Promotion; 1926-28, Treasurer and Business Manager Hastings College, Nebraska; 1928-39, Dean School of Commerce, Central Y. M. C. A., Chicago; 1937-44, Vice President, American Technical Society, Chicago; 1944— Manager, Industrial Division, Prentice-Hall, Inc., New York City.

Mr. Pasek is a member of the following clubs and societies—Alpha Sigma Phi; Pi Kappa Delta; Phi Sigma Phi; Quadrangle Club, University of Chicago; Executive's club of Chicago; Chicago Sales Executives club; Industrial Training Directors' Association; American Marketing Association;

National Association of Teachers of Speech; Commodore, Air Scouting, Boy Scouts of America; First Presbyterian church, Chicago; Trustee, Chicago Medical School; Engineers' club, New York City; Illinois Committee, Chicago Association of Commerce; Army Ordinance Association.

Author and lecturer; Vocational education; Public relations; Sales administration; Practical psychology in business; Post-War sales problems; Industry and education. (From *Who's Who in American Education*)

It is indeed a pleasure to welcome Mr. Pasek into our midst.

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CORRECTION

In the December, 1944, issue it was stated that the *Journal of the A. M. A.* reviewed and commended the bibliography on the history of medicine compiled by Miss Marguerite E. Campbell. This was an error. The periodical was the *Bulletin of the Medical Library Association*.

* * * * *

THE "CONTINENTAL" BREAKFAST Is Not Suitable for a Growing Child

In far too many homes, a breakfast of a roll and a cup of coffee is the fare for children as well as adults. Woefully deficient in vitamins and minerals, such a meal furnishes little more than a small amount of calories. A dish of Pabulum and milk, however, is just as easily prepared as a "continental breakfast," but furnishes a variety of minerals and the vitamin B complex, not found so abundantly in any other cereal or breadstuff. The addition of a glass of orange juice and one Mead's Capsule of Oleum Percomorphum can easily build up this simple breakfast into a nourishing meal for the children of the family as well as the adult members. It is within the physician's province to inquire into and advise upon such nutritional problems, especially since Mead Products are never advertised to the public.

* * * * *

All men are the same and our progress is purely exterior, mechanical and material. The great revolution—the one within—has not yet arrived. It was begun by Christianity but without result, because no Christian practices its teachings.

—Ibanez



Sigmund Krumholz, M.D.
1871 - 1945

Obituary

We deeply regret the death of a great teacher and friend of the Chicago Medical School, who, after a happy and very successful life and career was stricken by coronary thrombosis and died at the age of seventy-three.

Doctor Sigmund Krumholz was born in Austria, December 13, 1871, and soon came to the United States. His academic and medical education were received at the New York University and the Bellevue Hospital Medical College. He chose neurology as his specialty and continued his post-graduate study in Vienna, Munich, and Berlin. When he had completed his studies he came back to the United States where he received his first position as Associate in Neurology and Psychiatry at the Rush Medical School (1901-03). In 1906 he became Associate Professor of Neurology and Psychiatry at the Northwestern Medical School and held this position until 1933 when he became Chairman and Professor of Neurology Psychiatry at the Chicago Medical School, a position which he held until his tragic death, January 26, 1945.

His activities in the field of neurology were extensive. Since 1920, he was attending neurologist at the Cook County Hospital, Attending Neurologist and Psychiatrist at the Illinois Masonic Hospital, and at Mt. Sinai Hospital. He was also the consulting Neuro-psychiatrist of the Orthodox Jewish Old Peoples' Home, and was Professor at the Cook County Graduate School. His contacts were extensive.

Many valuable papers were contributed by Doctor Krumholz in the field of Organic Neurology, his most recent paper being a report of one of his cases: "Encephalitis Associated with Herpes Zoster."

He was a loyal and devoted friend of the School and students. The entire school body and members of his profession respected and admired him as a person, physician and scientist, as a teacher of highest ethics and moral standing. He was a careful, painstaking student who conscientiously devoted himself to his scientific investigation and brought forth much to enlighten his colleagues. He will be missed by all those who worked with him and by all who had the opportunity to study under him.

We all mourn the loss of this great man and offer our sincerest sympathy to Mrs. Krumholz and her daughter, Mrs. C. Shaw.

* * * * *

Alumni News

The following is an account received by the School of the act for which Captain J. C. McNamara was awarded the Silver Star:

DESCRIPTION OF ACT:

On 15 August, 1944, Captain J. C. McNamara jumped into France as Battalion Surgeon, 1st Battalion, 517th Parachute Infantry. He landed alone in a heavily-wooded and hilly section north of Les Ares, France, injuring a knee badly on his landing. Although he was barely able to walk, Captain McNamara searched the immediate vicinity, found his equipment bundle and proceeded to load himself with as much medical equipment as he could carry in his injured condition. Thereupon, he proceeded, still alone, to the objective. Despite the difficulties of the terrain, which was very rugged, Captain McNamara refused to throw away any of the medical equipment he had burdened himself with. His knee grew worse and he was barely able to move along with his heavy load. Small enemy groups in the area forced him, unarmed as he was, to hide frequently. At about 1500 hours, 16 August 1944, Captain McNamara reached the first elements of his battalion that he had seen since landing. This was a road block on the main highway from Les Ares to Le Muy. He was told there the location of his Battalion which was in position on Roch Rousse, a high hill south of the aforementioned road block. At that time, the Battalion was preparing to beat off the attack of an estimated enemy Battalion which was moving SE down the valley. The terrain that Captain McNamara had to cross to reach his Battalion was directly across the line of advance of the enemy Battalion. Despite this fact, Captain McNamara proceeded across the open field to his objective, he was taken under small arms fire by the enemy but, by crawling and creeping, reached the woods at the foot of Roch Rousse. There he was half-carried to the position where the Battalion was engaging the advancing enemy with mortar and small arms fire. Despite his exhaustion and weakened condition, Captain

McNamara administered to the Battalion's injured men who had been without a medical doctor's attention for almost two days. He refused to return to the Regimental Aid Station where he could have been treated himself but remained with his Battalion, caring for the wounded until the Battalion was relieved on 18 August, 1944. The medical supplies he had carried for two days proved invaluable as they were the only equipment Captain McNamara had with which to care for his wounded men. Only upon the Battalion's relief did Captain McNamara permit himself to be evacuated.

By his stoical and courageous conduct, Captain McNamara was an inspiration to all men in the Battalion. His determination to bring medical supplies to his unit enabled him to care for wounded men who might otherwise have died for lack of care.

* * *

1902—Dr. John Higginson has retired from practice. He is living in Long Beach, California.

1923—Dr. Mary Fitzbutter Waring compliments the School for its progress in recent years. Dr. Waring is in general practice in Chicago.

1926—We are very sad to hear that Dr. Henry Hilton Watson died last November. Dr. Watson lived in Elizabethtown, Illinois.

1928—Happier news come from Lt. Anna C. Besick, M. C., U. S. Army. Lt. Besick sent us a snapshot of herself and staff at the Third WAC Training Center at Fort Ogelthorpe, Georgia. She is Medical Officer in charge of the dispensary with various other duties at the station hospital.

1930—Dr. Eugene Thomas Alexander of Peoria, Illinois, died last November 11th of carcinoma of the liver. Dr. Alexander was 50 years old. He was a member of the staff of the John C. Proctor Hospital in Peoria. **The Quarterly** extends its deep regrets to Dr. Alexander's family and friends.

1932—From the 36th Field Hospital in the Pacific theatre, Captain Sidney R. Bazell writes to tell us that the Battle of Guam was "interesting — and tough." His address is: APO 987, c/o P.M., San Francisco, California. Capt. Bazell now has his third battle star.

Dr. Martin F. Heidgen has resumed his post as superintendent at the Elmhurst Community Hospital, Elmhurst, Illinois. Dr. Heidgen served two and a half years in the armed forces before being placed on the "inactive list" because of physical disabilities.

1933—Lt. B. Sonenschein sends us a "hello" from France. When last heard from he was with a hospital troop train, carrying wounded soldiers away from the front. Lt. Sonenschein's address is: 167th General Hospital, APO 562, c/o P.M., New York, N. Y.

Capt. J. Lewis Bailen is Assistant Chief of Dermatology and Venereal Diseases at Fort Knox, Kentucky. He expects overseas orders shortly. **The Quarterly** thanks Capt. Bailen for his compliment. When last heard of, Captain Carmen Scudieri was with the 1st Army in Belgium. He has been overseas for a year. His address is: 181st Ord. Bn., APO 230, c/o P.M., New York, N. Y.

1934—Lt. Andrew Krajec is with the Army Air Corps in Italy. His address is: 496th Service Squadron, APO 520, c/o P.M., New York, N. Y.

While he was on leave in Chicago, Capt. Joseph L. Bezdek visited the School. Capt. Bezdek is stationed at Camp Swift, Texas.

Major Thomas H. Culhane was in Chicago only long enough to call the School to say "hello." He is Flight Surgeon at a Regional Hospital in Texas.

1935—Captain J. A. Petrone was discharged from the Army Medical Corps. His present address is 1410 W. Grand Ave., Chicago.

Another visitor to the School was Dr. Frederick Schwartz, Psychiatrist at the Dixon State Hospital, Dixon, Illinois.

Thanks to Dr. John H. Shamel for his compliments on *The Quarterly* and for his generous contribution. Dr. Shamel was recently discharged from the Army Medical Corps.

1937—Dr. Jordon W. Rose writes *The Quarterly* to say that Captain Norman S. Angel was captured by the Germans in Holland on September 18, 1944. The information came from the Adjutant General's office.

1938—Captain Charles Wollak visited the School. He is now stationed in the United States, having returned from the European theatre of war.

Captain Elmer L. Pairon's wife has written to tell us that her husband has seen action in North Africa, Italy, and is now in France.

The address of Captain H. S. Horwitz is the 227th Station Hospital, APO 928, c/o P.M., San Francisco, California.

Dr. Gene S. Wong announces the opening of his offices at 3042 Wentworth Avenue, Chicago.

1939—Captain Frank Lawler has fully recovered from his recent illness. He is assigned to the Madigan General Hospital, Tacoma, Washington.

Captain H. H. Epstein visited the School recently. He is stationed at Foster General Hospital, Jackson, Mississippi.

Captain Morris Fox is stationed at Winter General Hospital, Topeka, Kansas.

Lieutenant Irving Blumenfeld visited the School while on an emergency leave. He is stationed on Saipan Island as Infantry Surgeon. His address is: 24th Infantry, 2nd Bn., Medical Detachment, APO 244, c/o P.M., San Francisco, California.

1940—From the 20th Field Hospital, APO 339, c/o P.M., New York, N. Y., Major Frederick Spector informs us that he has been assigned to a hospital unit all his own—"complete with nurses. It's what newspapers refer to as a 'front-line hospital'."

Captain Ben H. Barbour, Jr., is a Flight Surgeon with the Army Air Corps.

1941—Dr. Paul P. Garrison is practicing in Seneca, Illinois.

Captain Thaddeus C. Fijalkowski has been stationed in the Pacific area since May, 1943. He is at present in the Philippines. His address is: 22nd Post Surgical Hospital, APO 72, c/o P.M., San Francisco, California.

Captain Oscar M. Simon writes us a letter from the Marianas. He says he is enjoying his work very much. His address is: 170th Station Hospital, APO 244, c/o P.M., San Francisco, California.

1942—Captain John R. Krolikowski wants to hear from his former school friends. His address is: 4th Auxiliary Surgical Group, APO 403, c/o P.M., New York, N. Y.

Dr. Leon Rothman announces the birth of a son on February 14, 1945.

Dr. Julius Brant informs us that he opened an office in Chicago a few months ago. He is active in soccer ball, being captain of last year's champion Hakoah Center team.

1943—Dr. William S. Easton announces the birth of a daughter on last November 5th.

Lt. Carroll Z. Berman has been assigned to the Mayo Clinic in Rochester, Minnesota, for a three-months course in roentgenology.

Asst. Surgeon Allan J. Hruby of the Public Health Service, is stationed at Bethesda, Maryland.

Lt. Neal Esposito is at Brooke General Hospital, Fort Sam Houston, Texas.

Arthur L. Loebel was commissioned in the U. S. Public Health Service. He was married last September to Clair Peckler of Brooklyn, New York. He visited the School on his way to his station in New Orleans.

When last heard from, Lt. R. Bronberg was leaving for an unknown overseas destination. His address is: Medical Detachment, 1282nd Engr. C. Bn., APO 17567, c/o P.M., New York, N. Y.

Dr. Arnold L. Berger will enter the U. S. Army Medical Corps in April, 1946, upon completion of his service as Resi-

dent Physician at the New York City Cancer Institute. He was married on been stationed in the Pacific area since last December 9th to Sylvia Zackin of New York City.

We should like to thank Lt. LeRoy Levitt for his complimentary remarks about **The Quarterly**. Lt. Levitt wrote to us from Newport News, Virginia.

* * *

Lt. Allen W. Jackman is with the 21st Hospital Training Unit in France.

Lt. Herman L. Weisberg is an Assistant Surgeon with the U.S.P.H.S., attached to the Coast Guard. He is at present in New Orleans, La.

Lt. Eber A. Wein is U.S.P.H.S. officer at Fort Belknap Hospital, detailed to the Indian Service. He writes that he is fully in charge of a 47-bed and 8-bassinet hospital, both from the medical and administrative angles.

Lt. S. N. Surks is with the 85th Field Hospital Unit in England.

Lt. Jerome Tobis is Assistant Surgeon in the U.S.P.H.S. at Brookhaven, Mississippi.

Dr. Ralph C. Rudder announces the opening of offices for the practice of Eodontia, Oral and Plastic Surgery in Chicago.

Captain Bernard F. Rosenblum is in the Philippines. His address is Medical Detachment 173 Engr. (C) Bn., A.P.O. 235, c/o P. M., San Francisco, California.

Lt. George E. Fisher has been transferred to the A.S.F. Personnel Replacement Dept., Indian-town Gap, Pa.

Captain P. M. Garramone is at the Station Hospital at the Savanna Ordnance Depot, Proving Ground, Illinois.

Captain Jacob M. Epstein received the Bronze Star for meritorious achievement and service in France, Belgium, Holland, and Germany. He was commended by Major-General Hobbs for his inspiring work as medical officer with the 30th Infantry Division. He is now taking a well-earned rest in Holland.

Captain Herman H. Rhoad is with the 119th Armored Engineer Bn., well on his way to Berlin.

Captain L. O. Richey is with the 23rd Portable Surgery Hospital in the Netherlands East Indies. He is credited with saving the lives of many soldiers by designing a portable suction pump which serves as a portable aspirator.

NEW COMMISSIONS

CMS

Capt. J. Lewis Bailen	1933
Lt. Reginald J. Belyea	1928
Lt. Arnold Berger	1943
Lt. Carroll Z. Berman	1943
Lt. Crawford H. Black	1936
Lt. William Borkenhagen	1935
Lt. Robert C. Borrowman	1928
Lt. Dominic L. Cervera	1937
Lt. Cliff L. Clark	1937
Lt. Samuel J. Cohen	1942
Lt. Roland J. Davies	1926
Lt. Edward H. Einhorn	1942
Lt. Leon M. Furman	1935
Capt. John D. Hollander	1942
Lt. David F. Illyes	1930
Capt. Herbert Jacobs	1932
Lt. Louis Kadas	1935
Lt. Charles T. Kessler	1924
Lt. Stanley C. Kucharski	1924
Lt. Harry Leventhal	1939
Lt. James I. Lynch	1934
Lt. Edward Nissen	1943
Lt. Millard F. Norris	1933
Lt. A. A. Palow	1940
Capt. Samuel D. Parrilli	1938
Capt. Elmer L. Farrott	1938
Lt. Louis D. Popuch	1940
Lt. William B. Schmidt	1939
Lt. Max N. Silber	1943
Capt. J. B. Suino	1932
Lt. Samuel W. Tonkens	1936
Lt. Benjamin Sonenshein	1933

NEW COMMISSIONS

UNITED STATES PUBLIC HEALTH SERVICE

Asst. Surg. Milton Dillon	1943
Asst. Surg. Nathan Horowitz	1942
Asst. Surg. Jerome S. Tobis	1942
Asst. Surg. Allen J. Hruby	1943
Asst. Surg. Sidney Raymon	1942

ADVANCES IN RANK

CMS

Major Gene J. Arenson	1940
Capt. Thomas J. Bonick	1939
Capt. H. R. Bowman	1939
Lt. Comdr. Walter W. Dalitsch	1925
Capt. J. Gilbert Ellis	1933
Capt. George H. Flickinger	1933
Capt. Frank P. Ilasi	1935
Capt. William J. Kroulik	1937
Capt. Frank Lock	1926

Capt. I. J. Mayfield	1935
Capt. Caryl McIntyre	1936
Capt. Paul S. Nierenberg	1937
Capt. David L. Olinger	1940
Capt. Carl Pfeiffer	1933
Capt. Herbert P. Rasche	1934
Capt. Roger D. Shafer	1933
Capt. Aage Steiniche	1924
Capt. Henry Swiontek	1939
Capt. Neill A. Thompson	1940
Capt. Charles Wollak	1938
Capt. A. C. Tobey	1940
Capt. David Varon	1941
Capt. Theodore S. Wright	1940
Capt. Oscar M. Simon	1941
Capt. Hyman H. Epstein	1939
Capt. Joseph L. Bezdek	1934
Capt. Carmen Scudieri	1933
Capt. H. J. Horvitz	1938

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The following is an excerpt from a letter to Dr. Sheinin.

March 25, 1945

Dear Doctor Sheinin,

I am stationed in the United States Marine Hospital, Cleveland, Ohio; was put in charge of the department of respiratory diseases.

The work is quite interesting. The hospital has a capacity of 500 beds and the doctors are shifted from one department to another, always, though, keeping them within the limits of their specialties.

I am very happy with my assignment.

It was always a great pleasure teaching at your School and I intend to keep it up when we all can get back to a more peaceful life.

Will you please remember me to the faculty and the staff of the School.

I am sincerely yours,

I. L. Schnaar.

P. A. Surgeon, I. L. Schnaar, P.H.S. 5004

U. S. Marine Hospital,
Cleveland, Ohio.

Ed. Note: Dr. Schnaar was a member of the Dept. of Medicine at the Chicago Medical School.

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SUMMER DIARRHEA IN BABIES

Casec possesses outstanding merit in the treatment of diarrhea and loose stools in infants and in children. The promptness with which Casec checks diarrheal stools is an important factor in

arresting the dehydration which makes infantile diarrhea so serious a clinical problem. At the same time Casec replenishes calcium lost in the stools. The high protein content of Casec, moreover, aids in promoting tissue-growth in infants who have become wasted as a result of diarrhea. Because of its anti-fermentative action and its growth-promoting constituents, Casec is a particularly effective weapon against the so-called summer diarrhea.

Library

On the disease that Franklin Delano Roosevelt died of—

Cerebral hemorrhage—Extensive reports in the following books.

Bing & Haymaker. Textbook of nervous diseases, from the 5th German edition, 1939. p. 445-463.

Brain, R. Diseases of the nervous system. 2d ed. 1940. p. 299-308.

Wechsler. Clinical neurology. 5th ed. 1943. p. 342-345.

Watson, S. A. K. Neurology. 2 vols. 1940. p. 1064-84.

A bit about the history of libraries.

The Libraries of antiquity were established in temples or other religious buildings and were in charge of priests or monks. The Assyrian libraries were collections of clay tablets covered with cuneiform characters. These were usually strung together by copper wire, so forming roughly speaking, a volume.

In the Library of ASSUR-BANI-PAL, 626 (?) B. C. in Nineveh were collected probably 10,000 distinct works and documents arranged and catalogued, the largest before that established in Alexandria.

The Egyptian libraries at HELIOPOLIS date from the 4th dynasty B. C., the most famous library in Ancient Egypt being that of Rameses II, 1300-1236 B. C.

In Greece were many libraries, those of PISISTRATUS, and ARISTOTLE being among the most noted of them. Of especial interest to medical students and physicians is the mention of a special collect of medicine at CNIDUS.

The Alexandrian libraries were the most famous in the ancient world. In the reign of

PTOLEMY PHILEDELPHIA these libraries were established in separate buildings, each being a large collection altho it is hard to estimate just how many distinct works were there, owing to the fact that these books were largely of the "roll" type and it took many rolls to make a book. Authorities vary as to the number of volumes probably about 500,000 is a conservative estimate. In medieval Europe there were few libraries until the 6th and 7th centuries. For the next four or five hundred years collections of books and their growth were confined to monasteries. There was a remarkable gift of medical books to the cathedral library at Hildesheim in 1161 A. D.

Before the time of Aurelius Cassiodorus the literature of antiquity had been copied in various monasteries, but he is responsible for the impetus given to the production of scientific books. After his retirement from office in 540 A. D. he organized a monastic institution for scientific research, THE VIVARIAN, here he collected not only Greek original but Latin translations especially in the field of medicine.

In the 18th century the Academic de Medecine at Paris was started.

Sir Hans Sloan and John Radcliffe gave their collections of books to form the British Museum Library, one of the largest, richest and most important in the world.

Early libraries in the United States were private but toward the end of the 17th century so-called Bray libraries, parish libraries, began to appear. The first subscription library was started by Benjamin Franklin in 1730. Some of these subscription libraries are still in existence, The Atheneum in Boston being an outstanding example of this type.

American medical libraries were established about the same time, the first ones being the Library of the Pennsylvania Hospital in 1702, the New York Hospital library in 1776 and the College of Physicians of Philadelphia in 1780.

M. Campbell

Abstracts

GENES AND THE MAN. By Bentley Glass. x and 370 pages, 108 figures. Bureau of Publications, Teachers College, Columbia University, New York, 1943.

In an attempt at correlation of the embryological and hereditary bases of the ontogenetic development of a human individual, the author succeeds in putting forth a work consisting of elementary concepts, freely augmented by an interpretation of these concepts as applied to a comprehension of the entire process of growth and differentiation. The original intention to refrain from making this a textbook presentation is not fully adhered to, however, as the reading unfolds.

Starting with an explanation of the fundamental biological processes involved in fertilization, a consideration of the importance in these processes of the chromosomal distribution in mitosis and meiosis is then undertaken. This leads necessarily into the development of present day ideas of the genes as the torchbearers of hereditary patterns and probabilities, based on both animal experimentation and observation of successive human generations. The second half of the book concerns itself with embryonic processes, for the large part of a comparative phyletic nature. This is done with the usual references to application of that knowledge to better understanding of human embryonic life.

Probably the most commendable phase of this work, in this reviewer's opinion, is the author's recognition of both the need for greater correlation of the fields of embryology and genetics in completely grasping the whole picture of the resulting individual, and realization that such developmental processes do not stop at birth but play a vital role throughout man's days on earth. He gives environment and heredity their proper places of importance and shows their inseparable interacting forces.

From the viewpoint of the medical student or physician, this book probably has little to offer save an introduction to the uninitiated into the field of genetics. A more adequate introduction could, however, no doubt be derived from any of the standard textbooks on the subject. To one with basic knowledge of the genetic background of heredity, this could only serve as a cursory review. On the other hand, a great deal of interest and value is held for the strict biologist or the interested layman in the numerous discussions of the salient features of both plant and animal development.

Letters to the Editor

22. Jan. '45
Leyte

Editors
Quarterly Periodical
Chicago Medical School
Chicago, Illinois
Dear Sirs:

I've received copies of the "Quarterly" and certainly appreciate reading of the School's progress.

We've had some "hair-raising" experiences on Guam and in the Philippines, and some day at our Alumni meetings these stories can be told.

I'd like to ask a favor of you, in regard to Gerald Haidak. Could you tell me his address—army or elsewhere? Also Louis Esterman, both of the Class of '41.

Sincerely yours,
Capt. L. Tann, Class '41

Note:

Dr. Haidak's address is unknown.

Dr. Esterman's address is: 210 River Drive, East Patterson, N. J.

* * * * *

January 23, 1944

The Quarterly Editor
Chicago Medical School
Chicago, Illinois
Dear Sir:

Today I received the September issue of the *Quarterly* which was most welcome, and which I enjoy reading. I am looking forward to the December issue.

With wishes for continued success in your initiative and effort, I remain

Cordially yours,
Samuel C. Noto

New Address:

Capt. Samuel G. Noto, M.C.
Med. Air Evac. Off.
1378th A.A.F., Base Unit, N.A.D.—A.T.C.
La Guardia Field, New York, N. Y.

* * * * *

January 22, 1944

Dear Sir:

Thank you for the *Quarterly* which I received today; but why do you refuse mailing it to my correct address? I have written twice about my change of address, but you do not seem to like it.

You have me in England as late as September,

1944. Brother, by this time I have learned how expendable life actually is. I landed in France on D plus a very few days. Since then I learned the causes of some medical conditions; coronaries, sudden death, combat exhaustion, etc.

This is one for Ripley. In 1927 I did an open reduction on a humerus. The patient, who thanked me much for such excellent results, never returned to pay. Almost every collection agency in Chicago had his bill but no one could find him. One day while waiting for the St. Lo miracle, this man came to me as a combat exhaustion case. He remembered me and promised never to forget me.

Ja wohl, I am in Germany and have been here for a long time.

Capt. A. Kushner
Hq. 793 F.A.B.N., APO 339
c/o P. M., New York, N. Y.

* * * * *

March 1, 1945

The Editor
Quarterly
The Chicago Medical School
Chicago, Illinois

Dear Sir:

In the first few moments that I had, I perused carefully the new *Quarterly* I received a short time ago. I must commend you and staff for the excellent, meaty, informative journal you are producing. You have come a long way since Tobis, Barasch, and I put Vol. 1, No. 1 to sleep on a cold December morn five years ago.

Best luck and continued success to you all.

Sincerely,
1st Lt. LeRoy Levitt, '43

Note: It may interest Lt. Levitt to know that Dr. Harry Barasch is at present teaching in the Chicago Medical School Clinic. Lt. Harry Tobis is in the U. S. P. H. S. at Brookhaven, Miss.

* * * * *

Captain Franklin P. LeVan is in charge of a dispensary at Fort Knox, Kentucky. Capt. LeVan has been in France.

Captain Charles F. Hubner has "had an exciting time." He is one of the few survivors of the unit. His address is 326 Airborne Medical Co., A.P.O. 472, c/o P. M., New York, N. Y.

Dr. Carlo J. Panzarella announces the opening of the Panzarella Clinic, Humble, Texas.

From Captain B. L. Coniglio we hear that he is overseas with the 1st Army and has been in active combat since D-day plus 10.

Captain Joseph Fireman is surgeon with the 30th Battalion in Italy. He writes that he has visited many interesting places.

Captain E. H. Schnicke is Chief Surgeon at a rehabilitation center in Italy. He had spent the last two years in combat areas. His address is 6706 Conditioning Bn., A.P.O. 49, c/o P. M., New York, N. Y.

Captain L. Pertzovsky is Chief of X-ray with the 125th General Hospital in England.

Major Adio A. Freedman is in charge of neuropsychiatry at the 35th Evacuation Hospital, A.P.O. 403, c/o P. M., New York, N. Y.

Captain Paul S. Nierenberg is in Belgium with the U. S. Army Medical Corps.

Lt. Samuel Stymacin is with the 233rd General Hospital in the South Pacific.

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Electro-encephalography—

(Continued from page 19)

However, in brain trauma, very evident disturbances of the E.E.G. are also encountered.

Other conditions in which electroencephalography has been found to be clinically useful are the following: Cerebral tumor, subdural hematoma, cerebral hemorrhage, cerebral thrombosis, cerebral abscess, meningitis, encephalitis, Shilders' encephalomyelitis, Sydenham's chorea and behavior disorders. It has no clinical value in schizophrenia, manic-depressive psychosis, feeble-mindedness, migraine, psychoneurosis and hysteria.

Since the introduction of electroencephalography by Berger, studies of the brain potentials in epilepsy, particularly by the Gibbses and Lennox methods, have yielded valuable information in regard to the nature of the disease and have shown that this technic can furnish valuable aid to the clinician.

Each of the three types of epilepsy—grand mal and the equivalents—give a characteristic pattern to the brain waves. Grand mal attacks are characterized by a marked acceleration of the rate and an increase in amplitude; rapid, spike-like waves make their appearance, then gradually decrease in frequency and amplitude and disappear with the end of the attack. The petit mal seizure is characterized by a complex consisting of alternating slow and fast waves,

a rounded wave followed by a spike. These complexes occur with a frequency of 3 per second; they are of high amplitude. The equivalent (or psychomotor attack) is characterized by square-topped waves of high potential occurring with a frequency of 8-10 per second.

By means of the E.E.G., it has been possible to locate the origin of the attacks even in instances in which a definite aura did not occur—for example, with frontal lobe foci—and in some instances this has made possible an accurate surgical approach. In attacks of doubtful nature, the presence of the characteristic epileptic complexes may make the diagnosis clear, eliminating such possibilities as syncope or hysterical convulsions. By using various procedures which heighten the irritability of the nervous system, such as over breathing and pituitary antidiuresis, it has been possible to bring on subclinical attacks with the characteristic complexes. Lastly, the study of these brain potentials has permitted a more accurate and rapid evaluation of therapeutic measures.

In petit mal attacks, large slow waves appear about a second before the attacks become clinically manifest, and displace the previous rhythm. Early in a grand mal seizure, waves of relatively high frequency (10-30 per sec.) and low voltage appear, but as the attack progresses these fast waves give place to slower and larger waves which continue into the stage of stupor following the seizure. Delta waves may be a prominent feature of the E.E.G. of epileptics between seizures.

In normals, during light sleep, delta waves make their appearance while the alpha waves superimposed upon the slower rhythm of the latter persist. In deep sleep, the alpha rhythm disappears, being replaced by delta waves or, in some instances, by a faster rhythm.

For a glance at the near future, prospects which electroencephalography may afford science, we need only look at recent criminology experimentation. Seventy-five criminal psychopaths were studied both from an electroencephalographic and clinical approach. Electroencephalographic studies revealed 80% abnormal or borderline abnormal tracings.

* *

1. Radiology. 41: 130-141. August '43.
2. Arch. Neurol & Psychiat. 50: 111-128. August '43.
3. Dis. Nerv. System. 4: 202-205. July '43.
4. Arch. F. Psychiat. 114: 25-47. '41.

5. Rest & Taylor. Physiology.
6. Holt & McIntosh. Pediatrics.
7. Wechsler. Neurology.
8. Am. J. Psychiat. 100: 378-386. November '43.

* * * * *

Allergy and Immunity—

(Continued from page 10)

lesion. It is not to be wondered then, that many investigators firmly believe that allergy was a necessary adjunct to immunity. In order to evaluate the question of the necessity of allergy to immunity, we must realize certain facts.

One, is the large amount of evidence which has accumulated that animals, at least can be desensitized and left with their immunity relatively intact.

Two, is the fact that an allergic animal responds to the presence of the eliciting agent with a rapid mobilization of antibody carrying cells (microphages and macrophages).

This mobilization may be condered as an advantage, and it probably is, because it would necessarily mean a more or less rapid reduction in the numbers of the invading agent. However, it may also be a disadvantage. In the first place, the rapid mobilization may be of such a degree that there will be an interference with physiologic function in the involved tissue, and in the second place, there may be a focal reaction about distant quiescent lesions which may result in reactivation of these lesions, which in turn may result in endogenous reinfection. Whether the advantages outweigh the disadvantages or vice versa is a matter of opinion. However, it does seem, if we should look upon the matter from a practical point of view, that for most individuals, who are exposed only to minor dosages at relatively long intervals, the advantage of having at hand a reaction which automatically destroys the invading agent with no untoward systemic reaction, would seem to be desirable. Since this is the state of most of the adult population, it does not seem feasible to embark upon a program of desensitization even should a practical method be available.

To summarize:

we have sketched the general picture of the

immunology of tuberculosis and have attempted to properly fit in the phenomenon of allergy of infection. Although it is experimentally possible in certain animal species, the rabbit, to produce immunity with out allergy, as manifest by a positive tuberculin skin reaction, for all practical pupposes in man they are co-exisiting phenomena stemming from the same source. Therefore, they must of necessity be closely related although one need not go so far as to say that allergy is a necessary adjunct to immunity. Yet, one is not wrong in saying that under ordinary circumstances there is no proof that the allergic state may have certain advantages, at least on theoretical grounds.

* * * * *

Auriculo-Temporal Syndrome—

(Continued from page 20)

nerve of Jacobson, the tympanic plexus, and the lesser superficial pertosal nerve to reach the otic ganglion. The auriculo-temporal nerve sends an articular branch to the tempero-manfibular joint, several twigs to the external auditory meatus and from the trigeminal nerve but which also conbranches to the parotid gland, which are sensory tain the secretory fibers derived from the glosso-pharyngeal nerve. It terminates by giving rise to the anterior auricular branches and the superficial temporal branches. The former supply the skin of the tragus and the upper and outer part of the auricle. The latter supply most of the skin of the temporal area.

The cutaneous branches of the auriculo-temporal nerve carry vasodilator fibers destined for the subcutaneous arterioles and secretory fibers for the sweat glands which are derived from the superior cervical sympathetic ganglion. They also, of course, convey afferent fibers that are sensory to the skin. When the auriculo-temporal nerve is severed between its communications with the otic ganglion and its branches to the parotid gland, the secretory fibers to the parotid gland will be interrupted along with the above mentioned fibers. F. R. Ford suggests that during regeneration some of these fibers become misdirected, follow new pathways and innervate structures which they originally did not innervate. In this way, secretory fibers destined for the parotid gland probably grow along the cutaneous branches of the auriculo-temporal nerve. In the skin they form connections with

the blood vessels and sweat glands. It is thus evident that during eating, when volleys of nerve impulses pass from the inferior salivatory nucleus to the parotid gland, paroxysmal vasodilation and sweating will occur in the skin supplied by the auriculo-temporal nerve.

Of interest in connection with the auriculo-temporal syndrome is the rare syndrome of the crocodile tears. This syndrome was first described and so named by F. A. Bogorad in 1926. It is characterized by paroxysmal lacrimation during the eating of food and is an infrequent sequel of facial palsy. The name given to this condition is very appropriate, for the crocodile was formerly said to weep hypocritical tears while devouring its prey. Ford proposes a similar explanation for this syndrome. Injury to the facial nerve proximal to the geniculate ganglion will interrupt the motor fibers destined for the facial musculature, and the secretory fibers to the lacrimal, submaxillary and sublingual glands as well as certain other components. During regeneration, some of the fibers which formerly supplied the salivary glands become misdirected and form connections with the lacrimal gland. This lacrimation, paradoxically enough, comes to be associated with salivation.

* * *

Fridberg, D.: "Das Auriculo-temporal Syndrome," *Deutsch Zeitsch f. Nervenheilk*; 121:222-239. 1931.

Ford, F. R.: "Paroxysmal Lacrimation during Eating as a Sequel of Facial Palsy (Syndrome of the Crocodile Tears)," *Arch. Neurol. and Psychiat.*; 29:1278-1288. 1933.

* * * * *

Potentialities—

(Continued from page 5)

It is not that we elect the more difficult course in answer to a challenge but that we realize the potentialities of another great medical school taking its place in the midst of the proposed Medical Center of Chicago. An institution not only adequately training young men to follow a distinguished profession, but contributing greatly to the good of the community. An institution that not only attains minimum standards but gives every promise of adhering to and surpassing these standards.

We realize too, that with the depletion of the medical profession by the exigencies of war, that in the post-war period it will be necessary in the public interest, to provide adequate medical training to new students and re-training for veterans. To properly fulfill these obligations,

we must come up to standard. When we consider further that between us and the attainment of proper standards, stands only an adequate endowment, when we realize that academically we have demonstrated rapid and sustained progress, we find that the choice has been made. We are unalterably committed to doing our best to come up to standard.

We owe it to ourselves and to our community, as an individual and collective contribution to the general welfare and to secure and insure a healthier common man, to surmount this last barrier to the attainment of proper standards.

* * * * *

Parasites—

(Continued from page 8)

VII. HISTOPLASMOSIS.

Etiology: Histoplasma capsulatum and Histoplasma pyriforme. In tissue, simple or budding roundish cells about 3 microns in diameter, with an eccentrically located nuclear mass, and not staining peripherally, found most commonly in endothelial phagocytes. In culture, septate hyphae and chlamydospores, found singly or in chains, lateral conidia and large tuberculate cells.

Life cycles: Some authors believe that the disease is transferred from dogs to man.

Symptomatology: Darling's disease resembles kala-azar and tuberculosis. The diagnosis is established by cultivating the organism from sputum, blood and puncture material, and by skin test and biopsy.

Treatment: Antimony, iodides, X-ray and surgery have been employed.

ACKNOWLEDGMENTS.

The authors are indebted to Dr. V. Levine, Chairman of the Department of Pathology and Bacteriology of the Chicago Medical School, for the use of the slides No. 1, 6 and 7. The last slide is from a case reported by Dr. V. Levine to the Chicago Pathological Society, January, 1944.

The authors are equally grateful to Lt. Paul B. Szanto, M. C., A. U. S., former instructor of Pathology of the School, for his kind help in the interpretation of the slides.

* * * * *

Endowment—

(Continued from page 4)

A research program with its needs for staff, equipment and material constitutes an additional

major source of expenditures for which an institution must have adequate funds. As a rule, a research program does not bring in any material returns to a medical school; it involves expenditures exclusively. The expenditures associated with such a program extend to staff, equipment and material. To satisfactorily follow such a program, the staff must not only be qualified, but must also have considerable free time to pursue its investigative work. Because of this, a considerably larger staff is required than it would appear, if one is to consider the requirements of the teaching load.

From the above it is obvious that a medical school must be endowed and economically independent in order to be able to secure and maintain an adequate teaching and investigative program. *There can be no academic stability without economic security. There is no substitute for an endowment.*

* * * * *

Protozoan—

(Continued from page 18)

the enteric protozoa. Only the thorough knowledge of the morphologic patterns of these organisms assures the physician and the parasitologist that a proper diagnosis is being made. That such a diagnosis is essential for the treatment, which is the final task of medicine, is above discussion.

The author wishes to acknowledge the cooperation of Mr. M. Lerner who took the photomicrographs illustrating this article. She is equally grateful to Mr. A. Groupe for the photograph of Dr. O. Felsenfeld's poster on Intestinal Protozoa which he was kind enough to allow us to use.

* * * * *

Pituitary—

(Continued from page 13)

At present, there is no necessity to postulate a secretory innervation to the anterior lobe of the pituitary gland. Whatever functions the anterior lobe does possess, probably can be evoked through the blood stream.

* * *

Bissonnette, T. H.: Experimental control of sexual periodicity in animals and possible application to wildlife management. *Journal of Wildlife Management*, 1933, 2, 104-118.

Brambell, F. W. R. and A. S. Parkes: Studies on Ovulation. VI. Relative importance of concentration and absolute

amount of the ovulation producing hormone. *J. Physiol.*, 132, 74, 173-178.

Brookhart, J. M. and F. L. Dey: Reduction of sexual behaviour in male guinea pigs by hypothalamic lesions. *Am. J. Physiol.*, 1941, 133, 551-554.

Brooks C. M. and I. Gersh: Pericellular nerve fiber terminations in the pars nervosa and pars distalis of the rat's pituitary. *Anat. Rec.*, 1938, 70, 10-11.

Dempsey, E. W.: The relationship between the central nervous system and the reproduction cycle in the female guinea pig. *Am. J. Physiol.*, 1939, 126, 758-765.

Dempsey, E. W., and U. W. Uotila: Effect of pituitary stalk section upon reproductive phenomena in the female rat. *Endocrinology*, 1940, 27, 573-579.

Dey, F. L.: Evidence of hypothalamic control of hypophyseal gonadotropic functions in female guinea pigs. *Endocrinology*, 1943, 33, 75-82.

Drager, G. A.: A comparative study of the innervation of the pars distalis of the hypophysis cerebri. *Anat. Rec.* 1944, 88, 428.

Fisher, C., Ingram, W. R., and S. W. Ranson: Diabetes Insipidus and the Neuro-hormonal Control of Water Balance. A Contribution to the Structure and Function of the Hypothalamohypophyseal System. Edwards Brothers, Inc., Ann Arbor, 1938.

Friedgood, H. N. and W. B. Cannon: Automatic control of thyroid secretion. *Endocrinology*, 1940, 26, 142-112.

Gellhorn, Ernst: Automatic Regulations. Interscience Publishers, Inc., 1943. New York, N. Y.

Greulich, Victor A. "Photoperiodism" versus "Photoperiodicity." *Science*, 1945, 101, 353-354.

Harris, G. W.: The induction of ovulation in the rabbit, by electrical stimulation of the hypothalamohypophyseal mechanism. *Proc. Roy. Soc.*, 1937, (B) 122, 374-394.

Haterius, H. O. and A. J. Derbyshire, Jr.: Ovulation in the rabbit following upon stimulation of the hypothalamus. *Am. J. Physiol.*, 1937, 119, 329-330.

Hoskins R. G.: *Endocrinology*. W. W. Norton, Inc., New York, 1941.

MacFarland, W. E.: Adrenal cortical function independent of direct nervous action. *J. Exp. Zoology*, 1944, 93, 345-359.

Rosen, S.: Nasogenital relationship; nervous naso-pituitary pathway. *J. Mt. Sinai Hospital*, 1942, 9, 755-760.

Truscott, B. L.: The nerve supply to the pituitary of the rat. *J. Comp. Neur.*, 1944, 80, 235.

Uotilla, U. U.: The role of the cervical sympathetics in the regulation of thyroid and thyrotropic function. *Endocrinology*, 1929, 25, 63-70.

Zacharias, L. R.: Further studies in naso-genital relationship. *J. Comp. Neur.*, 1941, 74, 221-445.

Zacharias, L.: Vidian ganglion as source of innervation of anterior lobe; further studies. *Endocrinology*, 1942, 31, 638-643.

* * * * *

The best way to come to truth being to examine things as really they are, and not to conclude they are, as we fancy of ourselves, or have been taught by others to imagine.

—Locke

A Letter to the Editor

To the Editor of the *Quarterly*:

Within a few short weeks an effort termed "impossible" will be successfully terminated. The Student Body of the Chicago Medical School will at that time have established an escrow endowment fund. We, the Students, have formed the foundation of the Drive. Our work and sacrifice must point the direction to success. Now we "throw the torch" to the Alumni, the Faculty, and the Board of Trustees. The ultimate goal is for them to attain. They must not let our efforts go to naught.

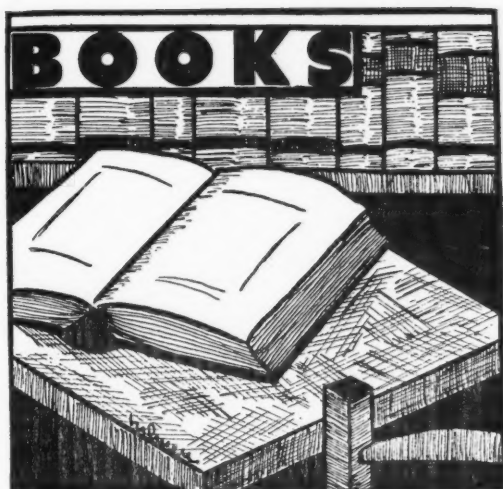
At the writing of this letter a sum of over \$300,000.00 is on deposit at the Merchandise National Bank. Additional amounts are pledged which fall due before the end of December.

It is my purpose, as President of the Student Council, to express my appreciation to the Endowment Committee, and to those students without whose cooperation the Drive would not have been able to succeed.

The whole Student Body deserves congratulation upon the success of their unparalleled effort.

Leonard C. Arnold

President of the Student Council



MALARIA, ITS DIAGNOSIS, TREATMENT AND PROPHELY. By William N. Bispham, M.D. .197 pages, 5 colored plates. The Williams and Wilkins Company, 1944, Baltimore, Md.

Col. Bispham has condensed his broad experience in malaria acquired as a physician in the tropics and subtropics into this excellent monography. The last chapter of the book, however, was contributed by Dr. L. T. Coggeshall and deals with special problems of West Africa. Twelve reviewers, all of them well known specialists, revised respective parts of the publication.

The best chapters of the book are History, Geographical Distribution, Etiology, Epidemiology, Symptomatology, Complications, Diagnosis and Prevention and Treatment of Malaria in West Africa. The greatest value of the chapter on etiology is that it gives, ((together with the good plates), a clear-cut and easily intelligible differentiation of the parasites. While chapters, such as that on symptomatology, are excellently arranged, the description of the treatment is full of unnecessary repetitions.

Although the book was intended for general practitioners, it is interesting also for the laboratory worker and epidemiologist. The numerous misprints and other typographical errors, so unusual in Williams and Wilkins publications, are probably due to war conditions and to the desire to have this important monograph published as quickly as possible.

Dr. Oscar Felsenfeld

ETIOLOGY, DIAIGNOSIS AND TREATMENT OF AMEBIASIS. By Charles F. Craig, M.D. .332 pages, 45 illustrations. The Williams and Wilkins Company, 1944, Baltimore, Md.

Dr. Craig, one of the foremost authorities in tropical medicine, published a similar book in 1934. Despite the many publications upon amebiasis during the last decade, his book maintained its leading place on the list of works concerning this subject for the past ten years. Recent advances of medical research, greater appreciation of

"enteric" disorders and the necessity for knowing about a parasite which infects at least ten per cent of the entire population of the United States, seem to have prompted the writing of this book.

Craig's new publication on amebiasis covers every phase of the subject in the clear, concise manner characteristic of his writing. Moreover, Craig attempts to present his material in an interesting, attractive way.

While all chapters of the book are written thoroughly and logically, the reviewer was most impressed by the section treating the symptomatology of amebiasis. The chapter is organized according to Craig's own classification of amebic infections, which seems to be very acceptable for the clinician. Special attention should be paid by every reader to the chapter on the treatment of amebiasis. Craig's statements are always frank and clear-cut.

The referent is sure that the book will be favorably accepted by all members of the medical profession. Its study is urgently recommended to everyone who wants to know about this important disease.

Dr. Oscar Felsenfeld

CLINICAL MALARIA. By 4. M. Tareyew. 299 pages, 37 figures. Medizdat, 1943, Moscow. (In Russian.)

The author of this interesting publication is the Director of the Clinical Department of the Central Institute of Malaria and Medical Parasitology in Moscow. It is a well-balanced discussion of malaria from all angles, written in such a way that both general practitioner and malaria expert can profit from the reading of the book.

For the American physician, perhaps most interesting are some unusual concepts, such as the author's belief that protracted malaria is usually due to reinfection; the description of the "fulminating" clinical form caused by *Pl. vivax* in the U.S.S.R., and home-made drugs, such as acricine (=atebrine) and plasmocide. One is also informed about the "Sovchinet," quinine produced from *canthichoma succiruba* grown now in Transcaucasia.

The discussion of immunity in malaria, the description of the changes of metabolism during the disease, and the description of the problems of diagnosis and prognosis are the most excellent parts of this fine book.

Dr. Oscar Felsenfeld

MANUAL OF TROPICAL MEDICINE. Col. Th. T. Mackie, M.C., Maj. G. W. Hunter, III, Sn. C., and Capt. C. B. Worth, M.C. Under the auspices of the National Research Council. Military Medical Manuals series. xix and 727 pages, 287 illustrations, 6 in color. W. B. Saunders Company, 1945. Price \$6.00.

This convenient and compact manual discusses all important problems of tropical medicine. It presents the most recent information concerning epidemiology and therapy, giving considerable space to medical entomology. Excellent pictures, numerous original charts, good tables and summaries help the student in the understanding of the more complicated features of tropical diseases, their vectors and causative agents. The description of the pathology, clinical characteristics and diagnosis of the

disease is clear-cut and very logical. The excellent presentation of the parasites add to the great value of the volume. The last chapter of the book, dealing with the laboratory diagnosis of tropical diseases, is satisfactory for the physician who has to examine such materials.

The reviewer wishes to recommend this excellent manual to everybody who wants to study tropical medicine, or who wishes to clarify his conception of questions regarding parasitology and medical entomology.

Dr. Oscar Felsenfeld

John A. Kolmer and Fred Boerner. *APPROVED LABORATORY TECHNIC*. Fourth edition, lxii and 1018 pages, 346 figures, 18 plates. D. Appleton Century Company, New York, 1945.

Former editions of this manual were received with great enthusiasm by the medical profession and by laboratory workers. The authority of the "Approved Laboratory Technic" increased steadily until it has become the most consulted laboratory text. The present edition shows a determination on the part of the editors and the publisher to present an up-to-date manual in spite of the present war-time difficulties. Their effort was successful. While nothing has been changed in the methodical, clear-cut and precise presentation of the material which added so much to the value of the previous editions, many new sections have been added to the new issue. Tests for hormones, vitamins; virological methods; examination of blood, tissue and feces for animal parasites; mycological procedures; the frog test for pregnancy; the chapters on the Rh factor; preservation of blood plasma, etc., should be read by every medical worker. Many chapters of the book have been re-written and new methods added; for instance, those sections dealing with the examination of blood, bacteriology, parasitology and serology. The readers of the *QUARTERLY* will be interested to know that the preserving fluid for *dysentery bacilli* devised by a member of the staff of the C.M.S., Dr. O. Felsenfeld, was included in the new edition.

The reviewer believes that this new issue of the *Approved Laboratory Technic* will be appreciated in all laboratories even more greatly than the former editions.

Viola Mae Young

* * * * *

I had rather believe all the fables in the Legend, and the Talmud, and the Alcoran, than that this universal frame is without a mind.

—Francis Bacon

Blonds have an average of 150,000 hairs on their lovely heads, while brunettes have an average of 90,000. In case you're interested, red-heads have 110,000.

The OVARY makes dames delicious,
And rules when the "time" is propitious;

An internal oven,
The fountain of lovin'.

It says, "sex is just my dish is!"

New Books

- Adams, R. C. Intravenous anesthesia. c1944.
- American Diabetes Association. Proceedings, vol. 1, 1941.
- Bunnell, S. Surgery of the hand. c1944.
- Cantrow & Trumper. Lead poisoning. 144.
- Castiglioni, A. History of medicine, tr. by E. B. Krumbhaar. 1941.
- Chicago Library Club. Directory of libraries in the Chicago area. 2d ed. 1945.
- Conant, N. F. Clinical mycology. 1944.
- Corner, G. W. Oursevles unborn. c1944.
- Halberstadt, G. T. Medical uses of soap. v1945.
- Harvey Lectures, vol. 38-39. 1942-43—1943-44.
- Hermann, G. R. Diseases of the heart. 3d ed. 1944.
- Hirschfeld, G. Social security. c1944.
- Holt & McIntosh. Diseases of infancy and childhood. 11th ed. 1940. cop. 2.
- Horovitz, S. B. Injury and death under workmen's compensation laws. 1944.
- Institute for Research in Biography. Who's important in medicine. c1945.

New Books in the Library

- Jones, E. S. Improvement of study habits. (1938)
- Kessler, H. H. Accidental injuries. 2d ed. rev. 4 and enl. c1941.
- Lapin, J. H. Whooping cough. 1943.
- Levine, S. A. Clinical heart disease. 3d ed. rev. 1945.
- Mayo Clinic. Collected papers. vol 35, 1944.
- Practical Medicine Series... Yearbook of dermatology and syphilology. 1944.
- Rehabilitation of the War Injured. ed. by Doherty & Runes. c1943. copy 2.
- Richter, G. H. Organic chemistry. 2d ed. c1943.
- Sappington, C. O. Industrial health. c1943.
- Solomon & Yakovlev, eds. Military neuro-psychiatry. 1944.
- Stitt & Strong. Diagnosis, prevention and treatment of tropical diseases. 7th ed. c1944. 2 vols.
- U. S. War Department. Basic field manual; military sanitation and first aid. 1940. copy 2.
- Vitamins and Hormones. vol. 2. 1944. copy 2.

- Wampler, F. J., ed. Industrial medicine. 1943.
- American Academy of Orthopedic Surgery. Peace and war orthopedic surgery. 1943
- Angevine i Ash. Atlas of orthopedic surgery. 1943.
- Archer, W. H. Life and letters of Horace Wells. 1944.
- Daniel t Munsell. Vitamin content of foods. 1937.
- Dunn, L. C. Heredity and variation. c1934.
- Lowsley & Kirwin. Clinical urology. 2d ed. 2 vols. 1944.
- Regan, L. J. Medical malpractice. 1943.
- Rigler, L. G. Roentgen diagnosis. 2d ed. c1943.
- Seckler-Hudson, C. Our constitution and government. 2d ed. 1941.
- Simmons & Gentzkow. Laboratory methods of the U. S. Army. 8th ed. 1944. 2d copy.
- Stokes, et al. Clinical syphilology. 3d ed. 1944.
- Truax, R. Joseph Lister, father of modern anesthesia. c1944.
- Urbach, E. Allergy. 1943.
- Abramson, D. I. Vascular response in extremities of man. c1944.
- Abt, I. A. Baby doctor. c1944.
- Beck, S. J. Rorschach's test. I. Basic processes. 1944.
- Bing, R. Compendium of regional diagnosis of brain and spinal cord. 11th ed. 1940.
- Bispham, W. M. Malaria. 1944.
- Cushing, H. Life of Sir Wm. Osler. 1940.
- Essays in the History of Medicine. 1944.
- Gesell & Amatruda. Developmental diagnosis. c1941.
- Hodgman & Coolbaugh. Handbook of chemistry and physics. 28th ed. c1944.
- Illinois. Illinois Commerce Commission; its history. powers. n.d.
- Landsteiner, K. Specificity of sero-logical reactions. c1936.
- Lichtwitz, L. Pathology and therapy of rheumatic fever. 1944.
- Maher, F. T. Reticulo-endothelial system in sulfonamide activity. 1944.
- Newman, H. H. Multiple human births. 1940.
- Pearse, A. S. Parasitology. 1942.
- Precentral Motor Cortex. 1944.
- Quarterly cumulative index medicus, vol. 35, 1944. (January-June)
- Reyniers, J. A., ed. Micrurigicol and germ-free techniques. 1943.
- Rocefeller Institute for Medical Research. Studies. vol. 126. 1944.
- Stockard, C. R. Genetic and endocrinic basis for . . . form and behavior. 1941.
- U. S. Office of Education. Vocational technical training. 1944.
- U. S. Pharmacopoeial Supplement, 2d to U. S. Pharmacopoeia.
- * * * * *
- Bailey, C. H. Constituents of Wheat. 1944
- Brown & Zerban. Sugar analysis 3rd ed. 1941.
- Cohn & Edsall. Proteins, amino acids and peptides. 143
- Jamieson, G. S. Vegetable fats and oils. 2d ed. 1943
- Northrup, J. H. Crystalline enzymes. 1939
- Pottenger, F. M. Symptoms of visceral disease. 8th ed. 1944.
- Shillaber, C. F. Photomicrography. c1944.
- Speransky, A. D. Basis for the theory of medicine. tr. by C. P. Dutt. c1943.
- Sumner & Somers. Chemistry of enzymes. 1943.
- Tauber H. Enzyme chemistry. 1937.
- Wise, L. E., ed. Wood chemistry. 1944.
- Woodman, A. G. Food analysis. 4th ed. 1941.
- Yater W. M. Fundamentals of internal medicine. 2d ed. c144.
- Yuong H. H. Genital abnormalities, hermaphroditism, and related adrenal disorders. 1937.
- Zilboorg & Henry. History of medical psychology. c1941.
- * * * * *

The first and still one of the best medical descriptions of angina pectoris was written in 1768 by Wm. Heberden, a London physician.

CASE No. 162—What is your opinion of the gag man who died in your office? Capt. Al K. Hall. *Answer:* 'He was at his wit's end.

LONGEVITY

News Note in the Boston Herald

Percival J. Parris, almost 96, of Paris, Me., has outlived his own life in the eyes of an insurance company mortality table, but certainly not his own usefulness. On Sept. 1, 1870, at the age of 21, he bought an insurance policy from the Mutual Life Insurance Company of New York. On Sept. 1, 1944, hale and hearty, he received the \$1116 proceeds of his own policy because he had outlasted the premium table, which runs only to age 96.

COLLECTION INNOVATION

Dr. Smith was summoned to attend a patient's maid. After a careful examination of her shapely figure, he said, "Get up and go to work. There's nothing wrong with you."

"I know," she replied, "but these people owe

me fifteen dollars and I'm staying in bed until I get it."

"Do you think that will help?" asked Dr. Smith.
"I do."

After a moment's reflection the doctor said,
"Well then push over—they owe me thirty."

Individuality is the salt of common life. You may have to live in a crowd, but you do not have to live like it, nor subsist on its food.

—Henry Van Dyke

THE LAND OF THE FREE?

The Lieutenant in the dental corps had as a patient a German prisoner with a severe toothache. After a thorough examination he told the prisoner in good college German that the tooth must be extracted.

The prisoner shook his head. He only wanted the pain stopped. The tooth would be pulled when he got back to Germany.

After much argument the Lieutenant said that unless the tooth was pulled the pain would not stop.

With a look of scorn the German said in a harsh voice, "Gott in Himmell! I thought, Amerika, she was a free country."

The person entitled to deep, profound, sincere, honest-to-goodness, one hundred percent, abiding sympathy with no restrictions, modifications or dilutions is the poor unfortunate guy who, for the first time, is trying to chew gum with a set of recently acquired false teeth.

—Illinois M. F.

HYPOPHYSIS! Glandular Rex!

Rules sleep, hunger, thirst, growth and sex;

A pukka, stout fellow,

It rides on its sella,

But when it's deposed, we are wrecks.

CASE No. 158—Dear Colonels Our neuropsychiatrist says "Mind is never matter." Well, then, "What is matter?" Major Si Kologie. Answer —Never Mind!

IRRADIATION SICKNESS

"Irradiation sickness may be prevented by the administration of adequate amounts of thiamin chloride; from six to nine mg. daily should be given to patients undergoing radium or roentgen therapy, and if any symptoms of irradiation develop the amount of thiamin should be increased."

—H. Swanberg, M. D., Miss. Valley Med. Jour.

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with the latest medical books

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SOUTHERN ECONOMICS

The unmarried mother of five pickaninnies began her clinic attendance in her sixth pregnancy. A nurse asked her why she didn't marry. "Why should I?" was the answer. "This way I got six men to support me instead of just one!"

—James Vaughan, M. D.

Wm. Stewart Halstead first demonstrated that injection of the trunk of a nerve produced anesthesia of the whole area supplied by the nerve.

It was John Snow in 1855 who first produced evidence to show that cholera was in general a water-borne disease.

Few persons realize that Louis Pasteur suffered partial paralysis of the left side as a result of a cerebral hemorrhage at forty-six.

It was G. Leonard Corning, a neurologist in New York, who discovered spinal anesthesia in 1885.

We are in a troublesome world, a strange common unrest, a strange disposition to forget that great injunction to prove all things. There is a strange restlessness, a strange desire to break away from that which is proved—to rule or ruin.

—Justice McReynolds

Truth is the first casualty in wartime.

—Lord Ponsonby

The divine beauty superior to all the dreams of the Earth; I have seen it; only a little courage is needed to reach it and stay there.

—Francois Rene de Chateaubriand

Sing, Muse (if a theme so dark, so long
May find a Muse to grace it with a song.)
By what unseen and unsuspected arts
The serpent Error twines round human hearts.

—Cowper

The surgeon's face mask was introduced by Johann von Mikulicz in 1896.

CASE No. 163—What did you do when the patient insulted you by offering you a shot of whiskey? Lieut. Cal O. Mel. Answer—I swallowed the insult.

CASE No. 164—Do you believe it's wrong for a physician to travel with his fiancée? Capt. N. Ema. Answer—No, there's a doctor taking his girl friend to Miami Beach today. Tomorrow he is going to Tampa with her.

CASE No. 165—Dear Colonel: What is the first indication that a physician's practice is a financial success? Doctor Flourish. Answer—When he occasionally is able to tell a patient there is nothing wrong with him.

Vincent's infection of the gums and throat may be satisfactorily treated by giving nicotinic acid. Dose employed is 25 to 50 mg. three times a day for adults and 10 mg. or more according to age for children. W. M. Johnson, North Carolina, M. J. 4:51, 1943.

Give us grace and strength to forbear and to persevere. Give courage and gaiety and the quiet mind, spare us to our friends, soften us to our enemies.—Robert Louis Stevenson.

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